

9/876,993

File 348:EUROPEAN PATENTS 1978-2005/Jan W03

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File 349:PCT FULLTEXT 1979-2002/UB=20050120,UT=20050113

(c) 2005 WIPO/Univentio

File 324:German National Patents 1980-2004/Nov

(c) 2004 Univentio

Set	Items	Description
S1	99124	DATABASE? OR DATASET? ? OR DATABANK? OR DATAFILE?
S2	147314	DATA() (BASE? ? OR SET? ? OR BANK? ? OR FILE? ? OR SYSTEM? ? OR COLLECTION? ? OR LIBRARY? OR LIBRARIES)
S3	3167	DATA() (ARCHIV? OR DEPOSITORY? OR DEPOSITORIES OR REPOSITOR- Y? OR REPOSITORIES OR WAREHOUS? OR (STORE OR WARE) ()HOUS??? ? OR MART? ? OR STOREHOUS?)
S4	941504	TABLE OR TABLES OR FILE OR FILES
S5	10009	UNDO OR UNDOES OR UNDONE OR UNIDID OR UNDOING OR UN() (DO OR DOES OR DONE OR DID OR DOING OR MAKE? ? OR MAKING OR MADE? ?)
S6	120	UNMAK??? ? OR UNMAD??? ?
S7	642577	RETRACT? OR RETROVER? OR REVERS? OR REVERT? OR RETROCES? OR RETROCED? OR RETROGRES? OR REGRESS?
S8	1776847	VOID??? ? OR REMOV??? ? OR ELIMINAT? OR PURG??? ? OR ERAS?- ??? ? OR CANCEL? OR ANNUL?
S9	68184	S5:S8(5N) (CHANG??? ? OR MODIFY? OR MODIFIES OR MODIFICAT? - OR ALTERR? OR ALTER?? ? OR ALTERING OR ALTERATION?)
S10	47316	S5:S8(5N) (EDIT OR EDITS OR EDITING OR EDITED OR REVIS???? ? OR TRANSACT? OR SAVE? ? OR SAVING OR LOAD??? ?)
S11	29915	S1:S4(3N) (RETURN? OR RESTOR? OR REINSTAT? OR RECONSTRUCT? - OR RECOVER? OR RETRIEV?)
S12	72	S1:S4(3N)RE() (STOR??? ? OR STORATION? OR INSTAT? OR CONSTR- UCT? OR COVER?)
S13	129	S11:S12(20N)S9:S10
S14	13	S13/TI,AB,CM
S15	16119	IC='G06F-017/30'
S16	22	S13 AND S15
S17	33	S14 OR S16
S18	33	IDPAT (sorted in duplicate/non-duplicate order)
S19	33	IDPAT (primary/non-duplicate records only)
S20	4681	ROLLBACK? OR ROLL??? ?()BACK? ?
S21	253	S20(5N) (CHANG??? ? OR MODIFY? OR MODIFIES OR MODIFICAT? OR ALTERR? OR ALTER?? ? OR ALTERING OR ALTERATION?)
S22	553	S20(5N) (EDIT OR EDITS OR EDITING OR EDITED OR REVIS???? ? - OR TRANSACT? OR SAVE? ? OR SAVING OR LOAD??? ?)
S23	219	S21:S22(20N)S1:S3
S24	30	S23/TI,AB,CM
S25	73	S23 AND S15
S26	26	S24 NOT S19
S27	26	IDPAT (sorted in duplicate/non-duplicate order)
S28	26	IDPAT (primary/non-duplicate records only)
S29	351	S20(5N) (PREVIOUS? OR EARLIER OR PAST OR ORIGINAL OR PRIOR)
S30	277	S21:S22(20N)S1:S4
S31	22	S30(20N)S29
S32	15	S31 NOT (S19 OR S28)
S33	15	IDPAT (sorted in duplicate/non-duplicate order)
S34	15	IDPAT (primary/non-duplicate records only)
		?

? t19/5,k/2,8,10-13,17,22

19/5,K/2 (Item 2 from file: 348)  
DIALOG(R) File 348:EUROPEAN PATENTS  
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01426240

Computer file storage and recovery method  
Dateispeicher und Wiederherstellungsverfahren  
Stockage de fichiers d'ordinateurs et methode de recuperation  
PATENT ASSIGNEE:

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PATENT (CC, No, Kind, Date): EP 1204028 A1 020508 (Basic)

APPLICATION (CC, No, Date): EP 2000309624 001031;

DESIGNATED STATES: DE; FR; GB

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: G06F-011/14

ABSTRACT EP 1204028 A1

A fileserver (F) connected to client computers (C1))) by a network  
includes a data store (4) partitioned into one or more client-accessible  
volumes (8 to 16). The data store is also partitioned into one or more  
back-up volumes (8' to 16') of a client-accessible volume, which will  
permit **reversal** of the **modification** of the contents of said file, if  
a client (C1))) requests **restoration** of said **file** to a previous  
version. Such a configuration of fileserver allows clients to restore the  
fileserver files to various previous versions without recourse to the  
more time-consuming process of retrieving required reconstruction data  
from, for example, a tape streamer back-up system.

ABSTRACT WORD COUNT: 108

NOTE:

Figure number on first page: 1

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 020508 A1 Published application with search report

Examination: 020828 A1 Date of request for examination: 20020620

Examination: 030423 A1 Date of dispatch of the first examination  
report: 20030311

Withdrawal: 040121 A1 Date application deemed withdrawn: 20030722

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200219	296
SPEC A	(English)	200219	1560
Total word count - document A			1856
Total word count - document B			0
Total word count - documents A + B			1856

...ABSTRACT more back-up volumes (8' to 16') of a client-accessible volume,  
which will permit **reversal** of the **modification** of the contents of  
said file, if a client (C1))) requests **restoration** of said **file** to a  
previous version. Such a configuration of fileserver allows clients to  
restore the fileserver...

- ...CLAIMS client-accessible volume;
- c) store in a corresponding back-up volume data which will permit reversal of the modification of the contents of said file;
  - d) detect if a client requests restoration of said file to a previous version; and
  - e) restore said file to the requested previous version on...
- ...client-accessible volume;
- b) storing in a corresponding back-up volume data which will permit reversal of the modification of the contents of said file;
  - c) detecting if a client requests restoration of said file to a previous version; and
  - d) restoring said file to the requested previous version on...

19/5,K/8 (Item 8 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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01091599 \*\*Image available\*\*

ASYNCHRONOUS INFORMATION SHARING SYSTEM

SYSTEME ASYNCHRONE DE PARTAGE D'INFORMATIONS

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200413725 A2-A3 20040212 (WO 0413725)

Application: WO 2003US23747 20030729 (PCT/WO US03023747)

Priority Application: US 2002400532 20020801; US 2002410883 20020913; US 2002308924 20021202; US 2002308879 20021202; US 2002308851 20021202

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD  
SE SG SK SL SY TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE  
SI SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: G06F-017/30

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 34134

#### English Abstract

Techniques are disclosed for sharing information in a wide variety of contexts. An information sharing system is described that allows both an explicit capture process and an implicit capture process (112, 114, 116) to add information items to a staging area (102, 104, 106). Further, the information sharing system supports both implicit and explicit consumption of information items (122, 124, 126) that are stored in said staging area (102, 104, 106). A rules engine is provided to allow users to create and register rules that customize the behavior of the capture processes (112, 114, 116), the consuming processes (122, 124, 126), and propagation processes (118) that propagate information from the staging areas (102, 104, 106) to designated destinations. Techniques are also described for achieving exactly-once handling of sequence of items, where the items are maintained in volatile memory. Techniques are also provided for recording DDL operations, and for asynchronously performing operations based on the previously-performed DDL operations.

#### French Abstract

L'invention porte sur des techniques de partage d'informations s'appliquant a une grande variete de contextes, et sur un systeme de partage d'informations permettant a la fois a un processus de capture explicite, et a un processus de capture implicite d'ajouter des elements d'information a une aire de transfert .ledit systeme permet la consommation implicite et explicite d'elements d'information stockes dans ladite aire. Un moteur de regles permet aux utilisateurs de creer et d'enregistrer des regles personnalisant la conduite du processus de capture, du processus de consommation, et du processus de propagation d'informations entre les aires de transfert et des destinations definies. L'invention porte egalement sur des techniques de traitement une seule fois de sequences d'elements contenus dans une memoire volatile, et sur des techniques d'enregistrement d'operations DDL (de langage de definition de donnees) et d'execution d'operations asynchrones sur la base d'operations DDL anterieures.

Legal Status (Type, Date, Text)

Publication 20040212 A2 Without international search report and to be republished upon receipt of that report.

Search Rpt 20040715 Late publication of international search report

Republication 20040715 A3 With international search report.

Republication 20040715 A3 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

Examination 20040902 Request for preliminary examination prior to end of 19th month from priority date

Main International Patent Class: G06F-017/30

Fulltext Availability:

Detailed Description

#### Detailed Description

... medium, for example, a floppy disk, a hard disk or tape, in a consistent and **recoverable** manner. A **database** also generates a stream of redo and **undo** information for every **change** it makes to the storage medium. The redo/undo stream is used primarily for **recovering** the **database** to a consistent point after a crash.

[0356] However, as explained above, the redo and...

19/5,K/10 (Item 10 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00959298      \*\*Image available\*\*

**METHOD FOR MANAGING DISTRIBUTED SAVEPOINTS ACROSS MULTIPLE DBMS'S WITHIN A DISTRIBUTED TRANSACTION**

**PROCEDE PERMETTANT DE GERER DES POINTS DE SAUVEGARDE REPARTIS DANS DES SGBD MULTIPLES AU COURS D'UNE TRANSACTION REPARTIE**

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IBM UNITED KINGDOM LIMITED, P O Box 41, North Harbour, Portsmouth, Hampshire PO6 3AU, GB, GB (Residence), GB (Nationality), (Designated only for: MG)

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**Legal Representative:**

BURT Roger James (agent), IBM United Kingdom Limited, Intellectual Property Law, Hursley Park, Winchester, Hampshire SO21 2JN, GB,

**Patent and Priority Information (Country, Number, Date):**

Patent: WO 200293420 A2-A3 20021121 (WO 0293420)

Application: WO 2002GB2123 20020509 (PCT/WO GB0202123)

Priority Application: US 2001858735 20010515

**Designated States:**

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI  
SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: G06F-017/30

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 8333

**English Abstract**

System, method, and program product for managing transactions on a plurality of Database Management Systems residing on separate participant servers and a coordinator server, A single transaction proceeds by multiple steps across more than one of the plurality of Database Management Systems as participants. Savepoints are assigned to the participants across the Database Management System, with at least one savepoint within a multiple step transaction. The DBMS responds to application requests to rollback to savepoint by rolling back the transaction, across the Database Management System participants, to the savepoint Further disclosed is a program product that contains code, which, either as written on the medium, or as instantiated in RAM, or both, controls the operation of a distributed database management system.

**French Abstract**

L'invention concerne un systeme, un procede et un produit programme permettant de gerer des transactions entre des systemes d'une pluralite de Systemes de Gestion de Bases de Donnees (SGBD) residant sur des serveurs participants distincts et un serveur de coordination. Une

transaction unique se deroule en plusieurs etapes par l'intermediaire de plusieurs systemes de la pluralite de Systemes de Gestion de Bases de Donnees, ces systemes etant consideres comme des participants. Des points de sauvegarde sont attribues aux Systeme de Gestion de Bases de Donnees participants, a raison d'au moins un point de sauvegarde au cours d'une transaction a etapes multiples. Les Systemes de Gestion de Bases de Donnees repondent aux demandes d'application de retour en arriere jusqu'a un point de sauvegarde en effectuant un retour en arriere, jusqu'audit point de sauvegarde, dans la transaction entre les Systemes de Gestion de Bases de Donnees participants. L'invention concerne en outre un produit programme comportant un code, qui, lorsqu'il est ecrit sur le support, ou instancie dans une RAM, ou bien les deux, commande le fonctionnement d'un Systeme de Gestion de Bases de Donnees distribue.

Legal Status (Type, Date, Text)

Publication 20021121 A2 Without international search report and to be republished upon receipt of that report.  
Examination 20030103 Request for preliminary examination prior to end of 19th month from priority date  
Search Rpt 20030904 Late publication of international search report  
Republication 20030904 A3 With international search report.  
Republication 20030904 A3 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

Main International Patent Class: G06F-017/30

Fulltext Availability:

Detailed Description

Detailed Description

... the failed transaction commenced. This is done by using the journal or log entries to **reverse** some of the **changes** in the database, and redo other changes in the **database** .

Transaction Processing - **Recovery** and Rollback - Savepoints

Savepoints are like bookmarks within a transaction. They may be created by...

19/5,K/11 (Item 11 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00893420 \*\*Image available\*\*

**SYSTEM AND METHOD FOR PROVIDING FINE-GRAINED TEMPORAL DATABASE ACCESS**  
**SYSTEME ET PROCEDE D'ACCES A UNE BASE DE DONNEES TEMPORAIRE A GRAIN FIN**

Patent Applicant/Assignee:

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Legal Representative:

CARLSON Stephen C (et al) (agent), Ditthavong & Carlson, P.C., 10507 Braddock Rd, Suite A, Fairfax, VA 22032, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200227561 A2-A3 20020404 (WO 0227561)

Application: WO 2001US30538 20010928 (PCT/WO US0130538)

Priority Application: US 2000676305 20000929  
Designated States:  
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)  
AU CA JP  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
Main International Patent Class: G06F-017/30  
International Patent Class: G06F-011/14  
Publication Language: English  
Filing Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 5935

#### English Abstract

A system and method for selectively viewing temporal row data in a consistent read-implemented database are described. Committed transactions effecting row data changes to a database are tracked and a stored system change number is assigned upon each committed transaction. A queried selection of row data values from the database is performed as of a query time occurring prior to the commit time of at least one committed transaction. The ordered row data values contained in the rollback segments storing a transaction identifier for at least one committed transaction are retrieved.

#### French Abstract

L'invention concerne un systeme et un procede de visualisation selective de donnees en rangees temporaires dans une base de donnees de lecture constante. Les transactions sauvegardees provoquant des changements dans les donnees en rangees d'une base de donnees sont pistees et un numero de changement du systeme stocke est assigne a chaque transaction sauvegardee. Une selection demandee de valeurs de donnees en rangees de la base de donnees est executee ainsi qu'un temps d'interrogation ayant lieu avant le temps de sauvegarde d'au moins une transaction sauvegardee. Les valeurs des donnees en rangees ordonnees contenues dans les segments d'annulation stockant un identificateur de transaction pour au moins une transaction sauvegardee sont recuperees.

#### Legal Status (Type, Date, Text)

Publication 20020404 A2 Without international search report and to be republished upon receipt of that report.  
Examination 20021219 Request for preliminary examination prior to end of 19th month from priority date  
Search Rpt 20030828 Late publication of international search report  
Republication 20030828 A3 With international search report.

Main International Patent Class: G06F-017/30

Fulltext Availability:  
Detailed Description

#### Detailed Description

... against the database. Log mining allows those operations which have effected the data to be **reconstructed** back into **database** statements and, hopefully, transposed, so as to allow committed **changes** to be **reversed** .

Therefore, there is a need for an approach to accessing data values as of a...are stored. Each rollback segment stores a transaction identifier and information pertaining to effecting or **restoring** the **database changes** , including addresses for a **undo** entries containing row data values reflecting the database changes. The database is transitioned into

successive...

19/5,K/12 (Item 12 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00878862 \*\*Image available\*\*

**INFORMATION COLLABORATION AND RELIABILITY ASSESSMENT**  
**COLLABORATION D'INFORMATIONS ET EVALUTATION DE FIABILITE**

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Legal Representative:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200213065 A1 20020214 (WO 0213065)

Application: WO 2001US24256 20010803 (PCT/WO US0124256)

Priority Application: US 2000222891 20000803

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS  
LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ  
TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: G06F-017/30

International Patent Class: G06F-017/00; H05K-010/00; G06K-009/00

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 19682

**English Abstract**

Information collaboration and credibility assessment is based upon a metadata-enhanced database (metabase) that maintains and uses metadata to evaluate the reliability of the metabase information, evaluate the reliability of the metabase users, improve the quality of the metabase information, provide various ancillary services (414), and provide enhanced browsing functionality. The metabase evaluates the reliability of the metabase information by evaluating the reliability of the metabase users (410), and evaluates the reliability of the metabase users by evaluating the reliability of the metabase information (408). A user ranking system is used to generate a relative ranking for each user based upon the metadata. A metadata-enhanced browser uses metadata to provide improved browsing services. A metadata-enhanced robot enables various applications to link a metabase.

**French Abstract**

La collaboration d'informations et l'évaluation de crédibilité sont basées sur une base de données améliorée par des métadonnées (metabase) qui gère et utilise les métadonnées pour évaluer la fiabilité des informations de la metabase, évaluer la fiabilité des utilisateurs de la metabase, améliorer la qualité des informations de la metabase, fournir



des services auxiliaires divers (414), et fournir une fonctionnalite de navigation amelioree. La metabase evalue la fiabilite des informations de la metabase par l'evaluation de la fiabilite des utilisateurs de la metabase (410), et evalue la fiabilite des utilisateurs de la metabase par l'evaluation de la fiabilite des informations de la metabase (408). Un systeme de classement des utilisateurs est utilise pour generer un classement relatif de chaque utilisateur pour fournir des services de navigation ameliorees. Un robot ameliore par des metadonnees permet a diverses applications d'etre reliees a une metabase.

Legal Status (Type, Date, Text)

Publication 20020214 A1 With international search report.

Main International Patent Class: G06F-017/30

Fulltext Availability:

Detailed Description

Detailed Description

... current discussion, but may provide interesting background information. It also prevents a user's **edits** from unintentionally **removing** meaningful data permanently. Users can "roll back" revisions to **return** a **database** record to a prior state.

Another example of such customization is user preferences. Each user...

19/5,K/13 (Item 13 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00858323 \*\*Image available\*\*

A SYSTEM AND METHOD FOR TRANSACTION-SELECTIVE RECONSTRUCTION OF DATABASE OBJECTS

SYSTEME ET PROCEDURE DE RECONSTRUCTION SELECTIVE DU POINT DE VUE DES TRANSACTIONS D'OBJETS D'UNE BASE DE DONNEES

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US (Residence), US (Nationality)

Inventor(s):

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Legal Representative:

PASTERNAK Sam (agent), Choate, Hall & Stewart, 53 State Street, Exchange Place, Boston, MA 02109, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200190954 A2-A3 20011129 (WO 0190954)

Application: WO 2001US16464 20010522 (PCT/WO US01016464)

Priority Application: US 2000207006 20000525; US 2001861830 20010521

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL  
TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: G06F-017/30

International Patent Class: G06F-011/14

Publication Language: English  
Filing Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 11149

#### English Abstract

Most commercial database systems provide a recovery mechanism that is used to restore data integrity in the event of a hardware failure. Many of these systems restore the database from the most recent backup file by rolling forward all transactions from the most recent undamaged transaction log. The present invention discloses a novel system and method for recovering data from user or application errors. Embodiments of the present invention selectively target and **undo** only those **transactions** that caused data corruption. In this way, the present invention is able to **recover** fine-grained **database** objects such as a table or a row within a table. The present invention has the further advantage of minimizing the number of transactions that are lost after recovery.

#### French Abstract

La plupart des systemes commerciaux de base de donnees mettent en place un mecanisme de recuperation qui est utilise pour retablir l'integrite des donnees en cas de panne materielle ou logicielle. Nombreux sont les systemes parmi ceux-ci qui retablissent la base de donnees a partir du fichier de secours le plus recent par recouvrement de toutes les transactions a partir du journal des transactions le plus recent n'ayant pas subi de dommages. La presente invention concerne des nouveaux systeme et procede permettant de recuperer des donnees a partir des erreurs d'utilisateurs ou d'applications. Des modes de realisation de la presente invention ciblent et effacent de maniere selective seulement ces transactions qui ont entraine une alteration des donnees. De cette facon, le systeme selon la presente invention est capable de recuperer de maniere plus detaillee des objets d'une base de donnees, tels qu'une table ou une rangee comprise dans une table. Le systeme selon l'invention presente un caractere avantageux en ce qu'il minimise le nombre de transactions qui sont perdues apres la recuperation.

#### Legal Status (Type, Date, Text)

Publication 20011129 A2 Without international search report and to be republished upon receipt of that report.  
Examination 20020627 Request for preliminary examination prior to end of 19th month from priority date  
Search Rpt 20040325 Late publication of international search report  
Republication 20040325 A3 With international search report.  
Republication 20040325 A3 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

Main International Patent Class: G06F-017/30

Fulltext Availability:  
Detailed Description

#### English Abstract

...recovering data from user or application errors. Embodiments of the present invention selectively target and **undo** only those **transactions** that caused data corruption. In this way, the present invention is able to **recover** fine-grained **database** objects such as a table or a row within a table. The present invention has...

#### Detailed Description

... set of transactions that could be "rolled back," thereby correcting a user or application error. "Undoing" a small set of erroneous **transactions** is a far more efficient method of **restoring** a **database** than is reapplying all valid transactions that occurred prior to a failure.

In addition, the...detected.

4

#### Detailed Description

The present invention is directed toward a system and method for **reconstructing database** objects using transaction-selective rollback. Transactionselective rollback is a technique used to **undo** a **transaction**, or series of **transactions**, performed on a database system. The transaction-selective rollback system and method of the present...

...row into table Y, a power failure occurs. In this case, when the power is **restored**, the **database** software identifies the failed **transaction** as only partially successful and **removes** the inserted row from table X. Thus the database is reverted to its original state...Assume that a user wished to rollback the transactions occurring at t2 and t3 in **Table 7**. The **reconstruct** function in this hypothetical would have information concerning which page and slot number was affected by the **transactions** that will be **undone** because this information is contained in the log records for t2 and t3. Assume for...

19/5,K/17 (Item 17 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00807545 \*\*Image available\*\*

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SYSTEME DE PROTECTION DU DROIT D'AUTEUR

Patent Applicant/Assignee:

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Patent Applicant/Inventor:

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Legal Representative:

MUSKER David Charles (et al) (agent), R.G.C. Jenkins & Co., 26 Caxton Street, London SW1H 0RJ, GB,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200141138 A2-A3 20010607 (WO 0141138)

Application: WO 2000GB4616 20001201 (PCT/WO GB0004616)

Priority Application: GB 9928558 19991202

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

CA JP US

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

Main International Patent Class: G11B-020/00

International Patent Class: G11B-020/10; G06F-001/00; G06F-012/14

Publication Language: English

Filing Language: English

Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 7228

#### English Abstract

One embodiment of the invention relates to a digital data signal comprising: a first data set of source data (1) and control data (2), said source data being modified in accordance with said control data to generate an intermediate set (3) of modified data when said data signal is copied by equipment adapted to read data on a block by block basis; and a second data set (4) associated with said first data set, said second data set being provided to enable modifications made, or modifications that otherwise would be made to said first data set to generate said intermediate data set upon copying of said signal by said equipment, to be at least substantially negated. Other embodiments of the invention relate to a carrier having a data signal recorded thereon, to a method of generating such a data signal, to a method of copying such a signal, to a computer program, to data copying apparatus and to a data transfer system.

#### French Abstract

Un mode de realisation de l'invention concerne un signal de donnees numeriques comprenant: un premier ensemble de donnees de donnees sources (1) et de donnees sources (2), lesdites donnees sources etant modifiees conformement auxdites donnees de controle pour produire un ensemble intermediaire (3) de donnees modifiees lorsque ledit signal de donnees est copie par un appareil capable de lire les donnees sur une base bloc par bloc; et un second ensemble de donnees (4) associe audit premier ensemble de donnees, ledit second ensemble de donnees comprenant des modifications autorisees realisees, ou des modifications qui seraient autrement realisees sur ledit premier ensemble de donnees pour produire ledit ensemble de donnees intermediaire lors du copiage dudit signal par l'intermediaire dudit appareil, devant etre au moins sensiblement annulees. D'autres modes de realisation de l'invention concernent un support sur lequel est enregistre un signal de donnees, un procede servant a produire un tel signal, un procede servant a copier un tel signal, un programme informatique, un dispositif de copiage de donnees, et un systeme de transfert de donnees.

#### Legal Status (Type, Date, Text)

Publication 20010607 A2 Without international search report and to be republished upon receipt of that report.  
Examination 20011018 Request for preliminary examination prior to end of 19th month from priority date  
Search Rpt 20011108 Late publication of international search report  
Republication 20011108 A3 With international search report.

Fulltext Availability:  
Claims

#### Claim

... said signal to cause said intermediate data s@t to be generated, accessing said second data set to retrieve data therefrom, and Supplying said retrieved data from said second data set to said interme iiate data set to reverse modifications made in accordance with said control data upon copying of said signal.

20 A method...

19/5,K/22 (Item 22 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00767637 \*\*Image available\*\*

**RESTORATION OF A COMPUTER TO A PREVIOUS STATE**

**RETABLISSEMENT D'UN ORDINATEUR A UN ETAT PRECEDENT**

Patent Applicant/Assignee:

MICROSOFT CORPORATION, One Microsoft Way, Redmond, WA 98052, US, US  
(Residence), US (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200101251 A1 20010104 (WO 0101251)  
Application: WO 2000US18093 20000630 (PCT/WO US0018093)  
Priority Application: US 99141757 19990630

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE  
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT  
LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM  
TR TT TZ UA UG US UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: G06F-011/14

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 7585

English Abstract

Methods and systems for backing up and restoring the state of a computer system are disclosed. Computer resource use is minimized by combining the backup methods of file copying and file logging. During backup, copies are stored of those files that are expected to change frequently. For other files, changes are noted in a change log and backup copies may be made if they would be useful when later restoring the files .  
**Restoration** proceeds by overwriting the frequently-changing files with stored copies and by **undoing** the **changes** to the logged files.

French Abstract

La presente invention concerne des procedes et des systemes permettant de sauvegarder et de retablir l'etat d'un systeme informatique.  
L'utilisation de ressource informatique est reduite au minimum par

combinaison des procedes de sauvegarde de copie de fichier et de consigne de fichier. Pendant la sauvegarde, les copies de ces fichiers qui sont susceptibles de changer frequemment sont enregistrees. Pour les autres fichiers, les changements sont notes dans un registre de changement et des copies de sauvegarde peuvent etre faites si elles peuvent s'averer utiles lors d'un retablissement ulterieur des fichiers. Le retablissement se produit par ecrasement des fichiers changeant frequemment avec des copies enregistrees et par annulation des changements des fichiers consignes dans le registre.

Legal Status (Type, Date, Text)

Publication 20010104 A1 With international search report.

Publication 20010104 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.

Examination 20010426 Request for preliminary examination prior to end of 19th month from priority date

English Abstract

...change log and backup copies may be made if they would be useful when later restoring the files. Restoration proceeds by overwriting the frequently-changing files with stored copies and by undoing the changes to the logged files.

? t19/5,k/24-26,31

19/5,K/24 (Item 24 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00467866 \*\*Image available\*\*

**A PARALLEL VIRTUAL FILE SYSTEM**

**SYSTEME DE FICHIERS VIRTUEL PARALLELE**

Patent Applicant/Assignee:

AB INITIO SOFTWARE CORPORATION,

Inventor(s):

LASSER Cliff,

LORDI Robert,

STANFILL Craig,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9858331 A1 19981223

Application: WO 98US12522 19980616 (PCT/WO US9812522)

Priority Application: US 97876734 19970616

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM  
GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX  
NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW GH GM  
KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI  
FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG

Main International Patent Class: G06F-017/30

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 11193

English Abstract

A parallel virtual file system for parallel processing systems including single-processor systems having multiple storage devices. The invention manages partitioned files as follows: partitions of a partitioned file

are stored in a set of isomorphic "data trees" (1), an additional directory tree, called the "control tree" (2), is used to build a model of the intended structure of the data trees; the combination of a control tree and a collection of data trees is referred to as a "multifile system" (10), a set of multifile subroutines (4) is provided for accessing and modifying the multifile system in such a way so as to preserve the data structures. In one of the embodiments of the invention, for a distributed transaction processing protocol to ensure atomicity of structural changes to the multifile system (10), interference of concurrent file system operations is prevented by creating a "transactional" lock for each file system.

#### French Abstract

Cette invention se rapporte a un systeme de fichiers virtuel parallele pour systemes de traitement en parallele, y compris des systemes a un seul processeur contenant plusieurs dispositifs memoires. Cette invention permet de gerer des fichiers divises: en stockant les divisions d'un fichier divise dans un ensemble "d'arbres de donnees" isomorphes (1), et en utilisant un arbre de repertoire supplementaire, appele "l'arbre de commande" (2), pour construire un modele de la structure desiree des arbres de donnees; en designant la combinaison d'un arbre de commande et d'une collection d'arbres de donnees par le terme "systeme multifichier" (10); et en prevoyant un ensemble de sous-programmes multifichiers (4) pour acceder au systeme multifichier et pour le modifier, de facon a preserver les structures des donnees. Dans l'un des modes de realisation de cette invention, pour un protocole de traitement de transactions reparti assurant l'atomicite des changements structurels apportees au systeme multifichier (10), on empeche les interferences dans le fonctionnement de systemes de fichiers concurrents, en creant un verrou "transactionnel" pour chaque systeme de fichiers.

Main International Patent Class: G06F-017/30

Fulltext Availability:

Detailed Description

#### Detailed Description

... start of each operation, record auxiliary information such that, if a system failure occurs, a " **file system recovery**0 " program may either **undo** partial **changes** effected by the interrupted operation or force the operation to completion.

The first method for **file recovery** requires the use of a distributed transaction processing environment which must provide certain services.

Start...

19/5,K/25 (Item 25 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00465483 \*\*Image available\*\*

**DISTRIBUTION OF A CENTRALIZED DATABASE**

**DISTRIBUTION D'UNE BASE DE DONNEES CENTRALISEE**

Patent Applicant/Assignee:

MICROSOFT CORPORATION,

Inventor(s):

PAL Shankar,

BENNETT John G,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9855948 A1 19981210

Application: WO 98US11570 19980605 (PCT/WO US9811570)  
Priority Application: US 97869588 19970605  
Designated States:  
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)  
CA JP AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
Main International Patent Class: G06F-017/30  
Publication Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 9605

#### English Abstract

A system that improves performance of a centralized DBMS is provided. The improved performance is realized by distributing part of the DBMS's functionality across multiple computers in a client/server environment. The distribution of the DBMS's functionality is performed by a mechanism known as the navigational agent, which is detached from the DBMS. The navigational agent integrates the centralized DBMS into a client/server environment so that performance improvements can be achieved by distributing a portion of the functionality of the centralized DBMS and some of its database objects to client computers. A database object is a unit of data in the database such as one or more fields of a record, one or more records, or one or more tables. By distributing part of the DBMS's functionality and some of the database objects to client computers, transactions can be performed on the client computers without having to access the server computer on which the database resides. Since these transactions are performed by the client computer instead of the server computer, the bottleneck created by the DBMS on the server computer is reduced, which improves performance of both the DBMS and programs interacting with the DBMS.

#### French Abstract

La presente invention concerne un systeme ameliorant le rendement d'un systeme de gestion de base de donnees (SGBD). On ameliore le rendement en distribuant une partie des fonctions du systeme SGBD dans les ordinateurs multiples d'un environnement client/serveur. La distribution des fonctions du systeme SGBD se fait au moyen d'un mecanisme appele agent de navigation, detache du SGBD. L'agent de navigation integre le SGBD centralise dans un environnement client/serveur de maniere a ameliorer le rendement en distribuant aux ordinateurs clients une partie des fonctions du SGBD centralise et certains de ses objets de base de donnees. Un objet de base de donnees est une unite de donnees contenues dans la base de donnees, comme un ou plusieurs champs d'un enregistrement, un ou plusieurs enregistrements, ou bien une ou plusieurs tables. En distribuant aux ordinateurs clients une partie des fonctions du SGBD et certains objets de la base de donnees, on peut effectuer les transactions sur l'ordinateur client sans avoir a entrer dans l'ordinateur serveur dans lequel reside la base de donnees. Ces transactions etant realisees par l'ordinateur client au lieu de l'ordinateur serveur, le goulot d'etranglement cree par le SGBD sur l'ordinateur serveur est reduit, ce qui ameliore le rendement du SGBD et celui des programmes en interaction avec le SGBD.

Main International Patent Class: G06F-017/30  
Fulltext Availability:  
Detailed Description

#### Detailed Description

... occurred during the processing of the transaction, the caller can issue a "Rollback" statement which **cancels** the **transaction** and **returns** the **database** to its pre-transaction state. Therefore, a



transaction either executes in its entirety or is completely canceled .

In either case, the transaction is said to have completed. In this manner, a transaction makes a sequence of operations...

19/5,K/26 (Item 26 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00450363 \*\*Image available\*\*  
METHOD AND SYSTEM FOR DEFINING TRANSACTIONS FROM A DATABASE LOG  
PROCEDE ET SYSTEME PERMETTANT DE DEFINIR DES TRANSACTIONS A PARTIR D'UN  
JOURNAL DE BASE DE DONNEES

Patent Applicant/Assignee:

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DEHOND Guy,  
BOGGS Dan,

Inventor(s):

ZAIKEN Kenneth A,  
DEHOND Guy,  
BOGGS Dan,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9840827 A1 19980917  
Application: WO 98US5087 19980316 (PCT/WO US9805087)  
Priority Application: US 97818513 19970314

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM  
GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX  
NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW GH  
GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI  
FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG

Main International Patent Class: G06F-017/00

International Patent Class: G06F-017/30

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 10596

English Abstract

A method and system of providing external transaction protection for a database (12) using the database log or journal (18). The method involves creating a set of transaction templates (28) which define transactions, using the templates to determine whether each record or entry in the journal represent part of a transaction, and maintaining a set of index file indicating transactions in progress. Each transaction template contains a number of filenames identifying files in the database (12) affected during the transaction defined by the template (28). Each template (28) contains a key value representing one or more data fields in the database (12) included in every action performed during the transaction. For each entry in the journal, a determination is made whether the entry belongs to a transaction based on the data fields represented in the entry and the key value templates (28). The index files are maintained by creating a new index file for each new transaction, adding data to a given index file from a journal entry which belongs to the transaction associated with the given index file, and deleting index files when transactions with which they are associated are

complete. In the event the database (12) is damaged, existing index files are used to determine which transactions did not complete before the database was damaged. The actions which were completed may be rolled back.

#### French Abstract

L'invention concerne un procede et un systeme de protection de transactions externes pour une base de donnees (12) a partir du journal (18) de la base de donnees. Le procede consiste a creer un ensemble de modeles de transactions (28) definissant des transactions, a determiner a partir des modeles si chaque enregistrement ou rubrique du journal represente une partie d'une transaction, et a tenir a jour un ensemble de fichiers index indiquant les transactions en cours. Chaque modele de transaction contient un certain nombre de noms de fichiers identifiant les fichiers de la base de donnees (12) touches pendant la transaction definie par le modele (28). Chaque modele (28) contient une valeur de cle representant un ou plusieurs champs de donnees de la base de donnees (12) inclus dans chaque action mise en oeuvre au cours de la transaction. A chaque rubrique du journal, on recherche d'apres les champs de donnees representes dans la rubrique et d'apres les modeles de valeurs de cle (28), si cette rubrique appartient a une transaction. Les fichiers d'index sont tenus a jour par creation d'un nouveau fichier d'index pour chaque nouvelle transaction, par adjonction de donnees a un fichier d'index considere provenant d'une rubrique du journal appartenant a la transaction associee au fichier d'index considere, et par suppression de fichiers d'index lorsque les transactions auxquelles ils sont associes sont achevees. Dans le cas ou la base de donnees (12) est endommagee, on utilise des fichiers d'index existants pour retrouver quelles etaient les transactions qui n'etaient pas achevees au moment de l'endommagement de la base de donnees. Les actions qui etaient achevees a ce moment-la peuvent etre reprises (roll-back).

International Patent Class: G06F-017/30

Fulltext Availability:

Detailed Description

Detailed Description

... it as complete regardless of the partial state of the data within the templates. The **transaction** is **removed** as if it were a normal completion of the transaction. i.e., by deleting the associated index file .

(3) **recover** a specific transaction, which invokes the recovery program for tile specific transaction and not necessarily...

19/5,K/31 (Item 31 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00171378

OBJECT-ORIENTED, LOGIC, AND DATABASE PROGRAMMING TOOL

OUTIL DE PROGRAMMATION D'EXECUTION, LOGIQUE ET D'UNE BASE DE DONNEES

Patent Applicant/Assignee:

EASTMAN KODAK COMPANY,

Inventor(s):

MELLENDER Fredric H,

STRAW Andrew G,

RIEGEL Stephen E,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9004829 A2 19900503

Application: WO 89US4687 19891023 (PCT/WO US8904687)

Priority Application: US 88791 19881024  
Designated States:  
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)  
AT BE CH DE FR GB IT JP LU NL SE  
Main International Patent Class: G06F-009/44  
International Patent Class: G06F-15:40  
Publication Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 40470

#### English Abstract

A programming tool is provided which integrates an object-oriented programming language system, a logic programming language system, and a database in such a manner that logic terms can be treated as objects in the object-oriented programming language system, objects can be treated as logic terms in the logic programming language system, and logic terms and objects are stored in the database in a common data structure format. Automatic management of the database is provided which is transparent to the user.

#### French Abstract

L'outil de programmation integre un systeme de langage de programmation d'execution, un systeme de langage de programmation logique et une base de donnees, de maniere que les termes logiques puissent etre traites en tant qu'objets dans le systeme de langage de programmation d'execution, que les objets puissent etre traites en tant que termes logiques dans le systeme de langage de programmation logique, et que les termes logiques et les objets soient stockes dans la base de donnees dans un format de structure de donnees commun. La gestion automatique de la base de donnees est transparente pour l'utilisateur.

Fulltext Availability:  
Claims

#### Claim

- ... objects in the database;
- b. access manager means called by,
  - 1). a buffer manager for **returning** objects from the **database** ,
  - 2). a transaction manager for adding/updating objects in the database at commit points, and for **undoing changes** to objects upon abort commands, and
  - 3). the object manager means; for providing high-level...

?

? t28/5,k/8,11,14-16,19,21

28/5,K/8 (Item 8 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00237743

Method for restarting a long-running, fault-tolerant operation in a transaction-oriented data base system.

Verfahren zum Wiederanlauf einer langlaufenden fehlertoleranten Operation in einem transaktionsorientierten Datenbasissystem.

Methode de redemarrage d'une operation a long deroulement, tolerant les fautes dans un systeme de base de donnees transactionnel.

PATENT ASSIGNEE:

International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB;IT)

INVENTOR:

Reinsch, Roger Alan, 20663 Greenleaf Drive, Cupertino, CA 95014, (US)

Zimowski, Melvin Richard, 6676 Copperwood Circle, San Jose, CA 95120, (US)

LEGAL REPRESENTATIVE:

Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)

PATENT (CC, No, Kind, Date): EP 236743 A2 870916 (Basic)

EP 236743 A3 890927

EP 236743 B1 931215

APPLICATION (CC, No, Date): EP 87101585 870205;

PRIORITY (CC, No, Date): US 835396 860303

DESIGNATED STATES: DE; FR; GB; IT

INTERNATIONAL PATENT CLASS: G06F-011/14;

CITED PATENTS (EP A): US 3564506 A

CITED REFERENCES (EP A):

PROCEEDINGS OF DISTRIBUTED COMPUTING, FALL COMPCON'80, 21st IEEE computer society international conference, Washington, DC, 23rd-25th September 1980, pages 433-441, IEEE, New York, US; W.H. KOHLER: "Overview of synchronization and recovery problems in distributed databases"

PATENT ABSTRACTS OF JAPAN, vol. 8, no. 229 (E-273) 1666 , 20th October 1984; & JP-A-59 108 441 (NIPPON DENKI K.K.) 22-06-1984;

ABSTRACT EP 236743 A2

A restartable load without logging method permits the restart of a LOAD operation from the last COMMIT point without requiring the writing of images of loaded records to the log. Instead, the method logs only a minimal amount of information, recording positions within the data sets to be loaded and within the tablespace being loaded.

ABSTRACT WORD COUNT: 59

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 870916 A2 Published application (A1with Search Report ;A2without Search Report)

Examination: 880330 A2 Date of filing of request for examination: 880126

Change: 880810 A2 Representative (change)

Search Report: 890927 A3 Separate publication of the European or International search report

Examination: 910529 A2 Date of despatch of first examination report: 910412

Change: 911009 A2 Representative (change)

Change: 911204 A2 Representative (change)

Grant: 931215 B1 Granted patent

Oppn None: 941207 B1 No opposition filed

Lapse: 991020 B1 Date of lapse of European Patent in a  
contracting state (Country, date): IT  
19931215,

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	376
CLAIMS B	(German)	EPBBF1	322
CLAIMS B	(French)	EPBBF1	404
SPEC B	(English)	EPBBF1	4940
Total word count - document A			0
Total word count - document B			6042
Total word count - documents A + B			6042

...CLAIMS a restartable LOAD operation in a transaction-oriented data base system, all changes to the **data base** being written to a log in support of recovery in the event of interruption, each **transaction** utilizing BEGIN, COMMIT, or **ROLLBACK** primitives to bound said **transaction**, REDOs ensuring transaction return to the most recent COMMIT point, while UNDOs ensuring return to...

28/5,K/11 (Item 11 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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01154483 \*\*Image available\*\*

SYSTEM AND METHOD OF MAPPING PATTERNS OF DATA, OPTIMISING DISK READ AND WRITE, VERIFYING DATA INTEGRITY ACROSS CLIENTS AND SERVERS OF DIFFERENT FUNCTIONALITY HAVING SHARED RESOURCES

SYSTEME ET PROCEDE POUR LA MISE EN CORRESPONDANCE DE SCHEMAS DE DONNEES, L'OPTIMISATION DE LA LECTURE ET DE L'ECRITURE SUR DISQUE, ET LA VERIFICATION DE L'INTEGRITE DE DONNEES ENTRE CLIENTS ET SERVEURS DE DIFFERENT

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only for: US)

Patent and Priority Information (Country, Number, Date):

Patent: WO 200477219 A2 20040910 (WO 0477219)

Application: WO 2004IN30 20040129 (PCT/WO IN04000030)

Priority Application: IN 2003125 20030130

Designated States:

(All protection types applied unless otherwise stated - for applications  
2004+)

AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM  
DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO  
RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE  
SI SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) BW GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: G06F

Publication Language: English

Filing Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 6716

English Abstract

The present invention relates generally to a system and method for mapping patterns of persistent data in a format independent of application functionality so that the archived data allows accessibility, data exchange and sharing across multi-user applications independent of functionality without any external process of import or export in a common format understood by sharing applications.

French Abstract

L'invention concerne en regle generale un systeme et un procede pour la mise en correspondance de schemas de donnees persistantes dans un format independant de la fonctionnalite des applications, de sorte que les donnees archivees permettent l'accessibilite, l'echange et le partage de donnees entre applications multi-utilisateurs, independamment de la fonctionnalite, sans processus externe d'importation ou d'exportation dans un format commun compris par les applications en partage.

Legal Status (Type, Date, Text)

Publication 20040910 A2 Without international search report and to be republished upon receipt of that report.

Fulltext Availability:  
Claims

Claim

... persistence to final  
persistence comprises the steps of:  
saving said intermediate data pattern in a **roll back** segment file  
**saving** said data pattern in **roll back** segment file in a log file  
for recovery incase of abnormal  
termination  
saving said final data pattern in a **database** file for final  
persistence. 1 B. The method as recited in claim 17 wherein the...

28/5,K/14 (Item 14 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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01103246 \*\*Image available\*\*

**CONCURRENCY CONTROL FOR DATABASE TRANSACTIONS USING DYNAMIC SERIALIZATION ORDERING**

**PROCEDE ET SYSTEME INFORMATIQUE POUR LE CONTROLE D'ACCES SIMULTANE UTILISANT L'ORDONNANCEMENT PAR LA SERIALISATION DYNAMIQUE**

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Legal Representative:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200425514 A2-A3 20040325 (WO 0425514)

Application: WO 2003US27833 20030903 (PCT/WO US03027833)

Priority Application: US 2002410733 20020913

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD  
SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE  
SI SK TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: G06F-017/30

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 13592

English Abstract

A mechanism controls concurrency among database transactions through the use of serial ordering relations. The ordering relations are computed dynamically in response to patterns of use. An embodiment of the present invention serializes a transaction that accesses a resource before a transaction that modifies the resource, even if the accessor starts after the modifier starts or commits after the modifier commits. A method of concurrency control for a database transaction in a distributed database system stores an intended use of a database system resource by the database transaction in a serialization graph. A serialization ordering is asserted between the database transaction and other database transactions based on the intended use of the database system resource by the database transaction. The serialization ordering is then communicated to a node in the distributed database system that needs to know the serialization ordering to perform concurrency control. Cycles in the serialization graph are detected based on the asserted serialization order and in order to break such cycles and ensure transaction serializability a database transaction is identified that is a member of a cycle in the serialization graph.

French Abstract

La presente invention a trait a un mecanisme de controle d'accès simultane parmi des transmissions de donnees par l'utilisation de relations d'ordonnancement en serie. Les relations d'ordonnancement sont calculees de maniere dynamique sur la base de profils d'utilisation. Un mode de realisation de la presente invention realise la serialisation d'une transaction qui accede a une ressource avant une transaction qui modifie la ressource, meme si le mecanisme d'accès debute apres le debut du modificateur ou effectue la validation apres validation de la part du modificateur. Le procede de controle d'accès simultane pour une transmission de donnees dans un systeme de base de donnees repartie memorise une utilisation projete d'une ressource de systeme de base de donnees par la transmission de donnees sous forme d'un graphique de serialisation. Un ordonnancement par serialisation est etabli entre la transmission de donnees et d'autres transmissions de donnees en fonction

de l'utilisation projetee de la ressource de systeme de base de donnees par la transaction de base de donnees. L'ordonnancement par serialisation est ensuite communique a un noeud dans le systeme de base de donnees repartie qui a besoin de connaitre l'ordonnancement par serialisation pour effectuer le controle d'accès simultane. Des cycles dans le graphique de serialisation sont detectes en fonction de l'ordonnancement par serialisation etabli et afin de rompre de tels cycles et assurer une aptitude a la serialisation des transmissions une transmission donnees est identifiee qui constitue un element d'un cycle dans le graphique de serialisation.

Legal Status (Type, Date, Text)

Publication 20040325 A2 Without international search report and to be republished upon receipt of that report.  
Search Rpt 20040513 Late publication of international search report  
Republication 20040513 A3 With international search report.  
Republication 20040513 A3 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.  
Examination 20040812 Request for preliminary examination prior to end of 19th month from priority date

Fulltext Availability:  
Claims

Claim

... establishing serialization ordering of Claim 7, wherein the resource usage record is released when the **database transaction** is aborted or rolled back .

9 The method of establishing serialization ordering of Claim 7, wherein the 1 5 resource...

28/5,K/15 (Item 15 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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01060133 \*\*Image available\*\*

CENTRALISED ADMINISTRATION OF A NETWORK OF MANAGED DATABASE SERVERS  
ADMINISTRATION CENTRALISEE D'UN RESEAU DE SERVEURS DE BASES DE DONNEES  
GERES

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200390114 A1 20031030 (WO 0390114)  
Application: WO 2002AU1285 20020919 (PCT/WO AU0201285)  
Priority Application: AU 20021854 20020419

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI  
SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: G06F-017/30

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 8969

English Abstract

A method for administering a distributed network (2) of managed database servers (4, 5) from a central database server (3), the method including the steps of: at predefined intervals, (a) receiving at the central database server (3) a heart beat signal identifying each managed database server (4, 5); (b) receiving notification at the central database server (3) of events resulting from execution of tasks by each managed database server (4, 5); (c) checking in the central database server (3) for new changes or tasks to be implemented by one or more of the managed database servers (4, 5); and (d) distributing the new changes or tasks from the central database server (3) to the one or more database servers (4, 5) for execution.

French Abstract

L'invention concerne un procede d'administration d'un reseau distribue (2) de serveurs de bases de donnees geres (4, 5) a partir d'un serveur de bases de donnees central (3). Ce procede consiste, a des intervalles

predefinis, (a) a recevoir au niveau du serveur de bases de donnees central (3) un battement de coeur identifiant chaque serveur de bases de donnees gere (4, 5); (b) a recevoir une notification au niveau du serveur de bases de donnees central (3) d'evenements obtenus a partir des taches executees par chaque serveur de bases de donnees gere (4, 5); (c) a verifier dans le serveur de bases de donnees central (3) les nouvelles modifications ou taches a executer par un ou plusieurs serveurs de bases de donnees geres (4, 5); et (d) a distribuer les nouveaux changements ou taches du serveur de bases de donnees central (3) a un ou plusieurs serveurs de bases de donnees (4, 5) afin qu'elles soient executees.

Legal Status (Type, Date, Text)

Publication 20031030 A1 With international search report.

Examination 20040129 Request for preliminary examination prior to end of 19th month from priority date

Fulltext Availability:

Claims

Claim

... indicates unsuccessful execution of a change implementation task on one or more of the managed **database** servers, causing the **change** implementation task to be **rolled back** on the one or more managed **database** servers at a subsequent heart beat signal.  
4 A method according to any one of...

...indicates unsuccessful execution of a change implementation task on one or more of the managed **database** servers, the procedures further causing the central **database** server to initiate **roll back** of the **change** implementation task on the one or more managed **database** servers at a subsequent heart beat signal.

26 A central **database** server according to any one of claims 23 to 25 wherein the central database server...

28/5,K/16 (Item 16 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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01036174

**A SYSTEM AND METHOD FOR MINING DATA**

**SYSTEME ET PROCEDE D'EXPLORATION EN PROFONDEUR DE DONNEES**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200365179 A2-A3 20030807 (WO 0365179)

Application: WO 2003US3205 20030203 (PCT/WO US0303205)

Priority Application: US 2002353487 20020201

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SK  
SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT SE SI  
SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: G06F-015/173

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 79606

**English Abstract**

A system and method for extracting data, hereinafter referred to as MitoMine™, that produces a strongly-typed ontology defined collection referencing (and cross referencing) all extracted records. The input to the mining process can be any data source, such as a text file delimited into a set of possibly dissimilar records. Mitomine contains parser routines and post processing functions, known as 'munchers'. The parser

routines can be accessed either via a batch mining process or as part of a running server process connected to a live source. Munchers can be registered on a per data-source basis in order to process the records produced, possibly writing them to an external database and/or a set of servers. The present invention also embeds an interpreted ontology based language within a compiler/interpreter (for the source format) such that the statements of the embedded language are executed as a result of the source compiler 'recognizing' a given construct within the source and extracting the corresponding source content. In this way, the execution of the statements in the embedded program will occur in a sequence that is dictated wholly by the source content. This system and method therefore make it possible to bulk extract free-form data from such sources as CD-ROMs, the web etc. and have the resultant structured data loaded into an ontology based system.

#### French Abstract

L'invention concerne un systeme et un procede d'extraction de donnees, ci-apres denommes "MitoMine™", qui permettent d'effectuer une collecte ontologique fortement typee fondee sur une verification (et une contre-verification) de tous les enregistrements explores. Les donnees saisies pour le processus d'exploration peuvent etre n'importe quelles donnees source, telles qu'un fichier textuel delimite en un ensemble d'enregistrements eventuellement dissemblables. "Mitomine" contient des routines d'analyse et des fonctions de post-traitement, connues sous le nom de 'masticateurs'. On peut acceder aux routines d'analyse soit par un processus d'exploration par lot, soit par un element d'un programme serveur en cours d'execution connecte a une source active. Les 'masticateurs' peuvent etre enregistres selon un systeme fonde sur les sources de donnees, aux fins de traiter les enregistrements extraits, en les ecrivant eventuellement dans une base de donnees externe et/ou un ensemble de serveurs. L'invention integre egalement un langage ontologique interprete dans un compilateur-interpreteur (pour le format source), qui fait que les instructions du langage integre sont executees consecutivement a la 'reconnaissance' par le compilateur source d'une construction donnee a l'interieur de la source, et a l'extraction du contenu source correspondant. Ainsi, l'execution des instructions contenus dans le programme integre s'effectue en une sequence dictee entierement par le contenu source. Les systeme et procede de l'invention permettent donc d'extraire en vrac des donnees a structure non imposee, a partir de sources telles que des CD-ROM, Internet, etc., et d'obtenir que les donnees structurees resultantes soient chargees dans un systeme ontologique.

#### Legal Status (Type, Date, Text)

Publication 20030807 A2 Without international search report and to be republished upon receipt of that report.

Search Rpt 20031106 Late publication of international search report

Republication 20031106 A3 With international search report.

Republication 20031106 A3 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

#### Fulltext Availability:

Claims

#### Claim

... still retaining variance information. This ability lends itself well to such things as evolving simulations, **database** record storage and **transaction rollback**, and animations. Additionally, if each instance of a given

28/5,K/19 (Item 19 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00790514 \*\*Image available\*\*

**OBJECT FRAMEWORKS FOR REINSURANCE**  
**CADRES ORIENTES OBJET POUR REASSURANCE**

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Legal Representative:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200123999 A2 20010405 (WO 0123999)

Application: WO 2000US26695 20000929 (PCT/WO US0026695)

Priority Application: US 99157101 19990930; US 99157225 19990930; US  
99157223 19990930

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

NO

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Main International Patent Class: G06F-009/44

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 20462

English Abstract

French Abstract

Legal Status (Type, Date, Text)

Publication 20010405 A2 Without international search report and to be  
republished upon receipt of that report.

Examination 20010927 Request for preliminary examination prior to end of  
19th month from priority date

Declaration 20030828 Late publication under Article 17.2a

Republication 20030828 A2 With declaration under Article 17(2)(a); without  
abstract; title not checked by the International  
Searching Authority.

Fulltext Availability:

Claims

Claim

... data), data entry, graphical user interfaces (GUIs), data and syntax  
validation, persistent data storage, committing **changes** to a **database**  
, **rolling back changes** to a **database**, and other suitable

functions. As used herein, "support processes for data validation" may include support...classes which are inherited by the business process subclasses, logging and displaying error messages, committing changes to a database, and/or rolling back changes to a database. In one embodiment, a first business process subclass may be configured to invoke a second...

28/5,K/21 (Item 21 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00784119

A SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR A REFRESHABLE PROXY POOL IN  
A COMMUNICATION ENVIRONMENT  
SYSTEME, PROCEDE ET ARTICLE POUR GROUPE D'ELEMENTS MANDATAIRES (PROXY)  
RAFFRAICHISSABLES DANS UN ENVIRONNEMENT A CONFIGURATIONS DE SERVICES DE  
COMMUNICATION

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200116668 A2-A3 20010308 (WO 0116668)  
Application: WO 2000US24113 20000831 (PCT/WO US0024113)  
Priority Application: US 99386239 19990831

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES  
FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA  
MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ  
UA UG UZ VN YU ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: G06F-009/46

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 149976

English Abstract

A system, method, and article of manufacture are provided for interfacing a naming service and a client with the naming service allowing access to a plurality of different sets of services from a plurality of globally addressable interfaces. The naming service calls for receiving locations of the global addressable interfaces. As a result of the calls, proxies are generated based on the received locations of the global addressable interfaces. The proxies are received in an allocation queue where the proxies are then allocated in a proxy pool. Access to the proxies in the proxy pool is allowed for identifying the location of one of the global addressable interfaces in response to a request received from the client.

#### French Abstract

L'invention concerne un systeme, un procede et un article permettant d'assurer l'interface entre un service de denomination et un client, le service de denomination donnant acces a plusieurs series de services a partir de plusieurs interfaces globalement adressables. Le service de denomination etablit des appels pour recevoir les emplacements des interfaces globalement adressables. Suite aux appels en question, les elements proxy sont etablis sur la base des emplacements recus pour les interfaces globalement adressables. Ces elements sont recus dans une file d'attente d'affectation puis attribues a un groupe d'elements proxy depuis la file d'attente. L'accès aux elements de ce groupe est autorise pour identifier l'emplacement de l'une des interfaces globalement adressables, en reponse a une demande recue de la part d'un client.

#### Legal Status (Type, Date, Text)

Publication 20010308 A2 Without international search report and to be republished upon receipt of that report.  
Examination 20010809 Request for preliminary examination prior to end of 19th month from priority date  
Search Rpt 20020221 Late publication of international search report  
Republication 20020221 A3 With international search report.

#### Fulltext Availability:

Claims

#### Claim

... transaction is committed, all changes made by the associated requests are made permanent. When a **transaction** is **rolled back**, all **changes** made by the associated requests are undone. Transaction Services provide the transaction integrity mechanism for the application. This allows all **data** activities within a single business event to be grouped as a single, logical unit of...

...Massachusetts Institute of Technology (MIT).

Does the system access legacy systems?

TP monitors can access **databases** and services running on mainframe **systems**. TP monitors frequently include mainframe networking capability and maintain **transaction rollback** during mainframe accesses. If access to the legacy system is read only, the messaging capabilities... demonstrate the ACID properties: Atomicity - all changes are made completely (committed) or not at all ( **roll - back** ). Consistency - the effects of a **transaction** preserve invariant properties. Isolation - intermediate data values are not visible to other transactions.

201

Durability...

? t28/5,k/26,1

28/5,K/26 (Item 26 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00492205

METHOD AND APPARATUS FOR PERFORMING TRANSACTIONS IN A STATELESS WEB ENVIRONMENT WHICH SUPPORTS A DECLARATIVE PARADIGM  
PROCEDE ET APPAREIL POUR EFFECTUER DES TRANSACTIONS DANS UN ENVIRONNEMENT WEB SANS ETAT ACCEPTANT UN PARADIGME DECLARATIF

Patent Applicant/Assignee:

ORACLE CORPORATION,

Inventor(s):

JACOBS Lawrence,  
ADUNUTHULA Seshu,  
ANAND Mala,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9923557 A1 19990514

Application: WO 98US22698 19981027 (PCT/WO US9822698)

Priority Application: US 97962536 19971031

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AL AM AT AU AZ BA BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GD GE GH GM  
HR HU ID IL IS JP KE KG KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO  
NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW GH GM KE  
LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR  
GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

Main International Patent Class: G06F-009/46

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 18807

#### English Abstract

A method and system for processing multiple-request transactions in a stateless environment is provided. A cartridge execution engine intercepts browser messages directed to a cartridge. The cartridge execution engine determines whether the browser messages are associated with transactions. If it is determined that browser messages are associated with transactions, then the cartridge execution engine sends transaction control messages to a transaction manager. In addition, the cartridge execution engine sends operation messages to the cartridge. The cartridge then performs the operations specified in the operation messages. In response to the transaction control messages from the cartridge execution engine, the transaction manager causes the multiple-request transactions to be either committed or rolled back as an atomic unit of work.

#### French Abstract

L'invention concerne un procede et un systeme permettant de traiter des transactions a demandes multiples dans un environnement sans etat. Un moteur d'execution a cartouche intercepte des messages navigateurs envoyes a une cartouche, puis ce moteur d'execution a cartouche determine si ces messages sont associes a des transactions. Si tel est le cas, le moteur d'execution a cartouche envoie des messages de gestion de transactions a un gestionnaire de transactions, et transmet des messages d'exploitation a ladite cartouche, cette cartouche executant ensuite les operations specifiees dans ces messages d'execution. En reponse aux messages de gestion de transactions provenant dudit moteur d'execution a cartouche, le gestionnaire de transactions execute ou reprend les transactions a demandes multiples sous la forme d'une unite atomique de travail.

Fulltext Availability:

Claims

#### Claim

... atomic unit of work.

3 The method of Claim 1, wherein the step of causing transactions to be rolled back includes the step of said transaction manager sending rollback messages to one or more database servers, wherein the rollback messages cause said one or more database servers to rollback

transactions as an atomic unit of work.

4 The method of Claim 1, wherein the browser...

28/5,K/1 (Item 1 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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01053443

METHOD AND APPARATUS FOR PERFORMING TRANSACTIONS IN A STATELESS WEB  
ENVIRONMENT WHICH SUPPORTS A DECLARATIVE PARADIGM  
VERFAHREN UND GERAT ZUM FUHREN VON TRANSAKTIONEN IN EINER ZUSTANDSLOSEN  
WEB-UMGEBUNG, WELCHE EIN DEKLARATIVES PARADIGMA UNTERSTUTZT  
PROCEDE ET APPAREIL POUR EFFECTUER DES TRANSACTIONS DANS UN ENVIRONNEMENT  
WEB SANS ETAT ACCEPTANT UN PARADIGME DECLARATIF

PATENT ASSIGNEE:

ORACLE CORPORATION, (1640220), 500 Oracle Parkway, Redwood Shores, CA  
94065, (US), (Proprietor designated states: all)

INVENTOR:

JACOBS, Lawrence, 573 Osprey Drive, Redwood Shores, CA 94065, (US)  
ADUNUTHULA, Seshu, 676 Matsonia Avenue, Foster City, CA 94404, (US)  
ANAND, Mala, 190 Woodridge Road, Hillsborough, CA 94010, (US)

LEGAL REPRESENTATIVE:

Viering, Jentschura & Partner (100645), Postfach 22 14 43, 80504 Munchen,  
(DE)

PATENT (CC, No, Kind, Date): EP 1025497 A1 000809 (Basic)  
EP 1025497 B1 030108  
WO 99023557 990514

APPLICATION (CC, No, Date): EP 98956226 981027; WO 98US22698 981027

PRIORITY (CC, No, Date): US 962536 971031

DESIGNATED STATES: DE; FR; GB; NL

INTERNATIONAL PATENT CLASS: G06F-009/46

CITED PATENTS (EP B): WO 97/40457 A

CITED PATENTS (WO A): XP 501824 ; XP 4095302

CITED REFERENCES (EP B):

GRAY J ET AL: "SCALE UP WITH TP MONITORS" BYTE, vol. 20, no. 4, 1 April  
1995, pages 123-126, 128, XP000501824

SZMURLO M ET AL: "A network of asynchronous micro-servers as a framework  
for server development" COMPUTER NETWORKS AND ISDN SYSTEMS, vol. 29,  
no. 8-13, September 1997, page 1041-1051 XP004095302;

CITED REFERENCES (WO A):

GRAY J ET AL: "SCALE UP WITH TP MONITORS" BYTE, vol. 20, no. 4, 1 April  
1995, pages 123-126, 128, XP000501824

SZMURLO M ET AL: "A network of asynchronous micro-servers as a framework  
for server development" COMPUTER NETWORKS AND ISDN SYSTEMS, vol. 29,  
no. 8-13, September 1997, page 1041-1051 XP004095302;

NOTE:

No A-document published by EPO

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 000809 A1 Published application with search report

Application: 990721 A1 International application (Art. 158(1))

Oppn None: 040107 B1 No opposition filed: 20031009

Examination: 020508 A1 Date of dispatch of the first examination  
report: 20020325

Examination: 000809 A1 Date of request for examination: 20000530

Change: 010523 A1 Inventor information changed: 20010403

Grant: 030108 B1 Granted patent

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text Language Update Word Count



CLAIMS B	(English)	200302	1113
CLAIMS B	(German)	200302	1034
CLAIMS B	(French)	200302	1334
SPEC B	(English)	200302	16945
Total word count - document A			0
Total word count - document B			20426
Total word count - documents A + B			20426

...CLAIMS atomic unit of work.

3. The method of Claim 1, wherein the step of causing **transactions** to be **rolled back** includes the step of said **transaction manager** (606) sending **rollback** messages to one or more **database** servers, wherein the rollback messages cause said one or more **database** servers to **rollback transactions** as an atomic unit of work.
4. The method of Claim 1, wherein the browser...

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File 2:INSPEC 1969-2005/Jan W3  
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File 8:EI Compendex(R) 1970-2005/Jan W3  
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File 34:SciSearch(R) Cited Ref Sci 1990-2005/Jan W3  
(c) 2005 Inst for Sci Info  
File 35:Dissertation Abs Online 1861-2004/Dec  
(c) 2004 ProQuest Info&Learning  
File 65:Inside Conferences 1993-2005/Jan W4  
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File 94:JICST-EPlus 1985-2005/Dec W3  
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(c) 2004 FIZ TECHNIK  
File 99:Wilson Appl. Sci & Tech Abs 1983-2004/Nov  
(c) 2004 The HW Wilson Co.  
File 144:Pascal 1973-2005/Jan W2  
(c) 2005 INIST/CNRS  
File 256:TecInfoSource 82-2004/Dec  
(c) 2004 Info.Sources Inc  
File 266:FEDRIP 2004/Oct  
Comp & dist by NTIS, Intl Copyright All Rights Res  
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
(c) 1998 Inst for Sci Info

Set	Items	Description
S1	591544	DATABASE? OR DATASET? ? OR DATABANK? OR DATAFILE?
S2	497688	DATA() (BASE? ? OR SET? ? OR BANK? ? OR FILE? ? OR SYSTEM? ? OR COLLECTION? ? OR LIBRARY? OR LIBRARIES)
S3	14741	DATA() (ARCHIV? OR DEPOSITORY? OR DEPOSITORIES OR REPOSITOR- Y? OR REPOSITORIES OR WAREHOUS? OR (STORE OR WARE) ()HOUS??? ? OR MART? ? OR STOREHOUS?)
S4	663948	TABLE OR TABLES OR FILE OR FILES
S5	2660	UNDO OR UNDOES OR UNDONE OR UNIDID OR UNDOING OR UN() (DO OR DOES OR DONE OR DID OR DOING OR MAKE? ? OR MAKING OR MADE? ?)
S6	1416373	UNMAK??? ? OR UNMAD??? ? OR RETRACT? OR RETROVER? OR REVER- S? OR REVERT? OR RETROCES? OR RETROCED? OR RETROGRES? OR REGR- ESS?
S7	1416169	RETRACT? OR RETROVER? OR REVERS? OR REVERT? OR RETROCES? OR RETROCED? OR RETROGRES? OR REGRESS?
S8	1896392	VOID??? ? OR REMOV??? ? OR ELIMINAT? OR PURG??? ? OR ERAS?- ??? ? OR CANCEL? OR ANNUL?
S9	206	UNMAK??? ? OR UNMAD??? ?
S10	65917	S5:S8(5N) (CHANG??? ? OR MODIFY? OR MODIFIES OR MODIFICAT? - OR ALTERR? OR ALTER?? ? OR ALTERING OR ALTERATION?)
S11	26698	S5:S8(5N) (EDIT OR EDITS OR EDITING OR EDITED OR REVIS???? ? OR TRANSACT? OR SAVE? ? OR SAVING OR LOAD??? ?)
S12	4273	S1:S3(3N) (RETURN? OR RESTOR? OR REINSTAT? OR RECONSTRUCT? - OR RECOVER?)
S13	3	S1:S3(3N)RE() (STOR??? ? OR STORATION? OR INSTAT? OR CONSTR- UCT? OR COVER?)
S14	670	S11:S12 AND S9:S10
S15	4555	ROLLBACK? OR ROLL??? ?()BACK? ?
S16	46	S15(5N) (CHANG??? ? OR MODIFY? OR MODIFIES OR MODIFICAT? OR ALTERR? OR ALTER?? ? OR ALTERING OR ALTERATION?)
S17	414	S15(5N) (EDIT OR EDITS OR EDITING OR EDITED OR REVIS???? ? - OR TRANSACT? OR SAVE? ? OR SAVING OR LOAD??? ?)
S18	52	S12:S13 AND S10:S11
S19	25	S16:S17 AND S12:S13

S20 77 S18:S19  
S21 12 S20/2001:2005  
S22 65 S20 NOT S21  
S23 43 RD (unique items)

23/7/4 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

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6240845 INSPEC Abstract Number: C1999-06-6160B-029

**Title: Recovery in distributed extended long-lived transaction models**

Author(s): Gore, M.M.; Ghosh, R.K.

Author Affiliation: Dept. of Comput. Sci. & Eng., Indian Inst. of Technol., Kanpur, India

Conference Title: Proceedings. 6th International Conference on Advanced Systems for Advanced Applications p.313-20

Editor(s): Chen, A.L.P.; Lochovsky, F.H.

Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA

Publication Date: 1999 Country of Publication: USA xii+356 pp.

ISBN: 0 7695 0084 6 Material Identity Number: XX-1999-01043

U.S. Copyright Clearance Center Code: 0 7695 0084 6/99/\$10.00

Conference Title: Proceedings. 6th International Conference on Database Systems for Advanced Applications

Conference Sponsor: Nat. Tsing Hua Univ.; Nat. Sci. Council; Minstr. Educ.; Inf. Process. Soc. Japan

Conference Date: 19-21 April 1999 Conference Location: Hsinchu, Taiwan

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: We address the recovery and the **rollback** problem in distributed collaborative **transactions**. We propose a solution to the problem in a generalized ARIES framework. We modified its existing data structures and provided additional data structures for recovery of distributed extended long-lived transactions. In the proposed model the transactions communicate and collaborate only by exchanging messages. The messages are logged along with usual **database** actions. In **recovery** of distributed extended transactions these message logs and message tables are extensively used. The recovery algorithms work in a distributed environment, under extended transaction models, with different kinds of failures and **transaction rollback**. (14 Refs)

Subfile: C

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23/7/5 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

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6171762 INSPEC Abstract Number: C1999-04-6160-001

**Title: A recovery method supporting user-interactive undo in database management systems**

Author(s): Won-Young Kim; Kyu-Young Whang; Young-Koo Lee; Sang-Wook Kim

Author Affiliation: Dept. of Comput. Sci., Korea Adv. Inst. of Sci. & Technol., Taejon, South Korea

Journal: Information Sciences vol.114, no.1-4 p.237-53

Publisher: Elsevier,

Publication Date: March 1999 Country of Publication: USA

CODEN: ISIJBC ISSN: 0020-0255

SICI: 0020-0255(199903)114:1/4L.237:RMSU;1-L

Material Identity Number: I132-1999-002

U.S. Copyright Clearance Center Code: 0020-0255/99/\$19.00

Document Number: S0020-0255(98)10050-6

Language: English Document Type: Journal Paper (JP)

Treatment: Practical (P)

**Abstract:** User-interactive undo is a kind of recovery facility that allows users to correct mistakes easily by canceling and reexecuting operations that have already been executed. Supporting user-interactive undo is essential for authoring processes in new database applications such as software engineering, hypermedia, and computer-aided design. A partial rollback using savepoints supported by commercial database management systems (DBMSs), which allows only cancellation of executed operations, is a restricted form of user-interactive undo. Although many applications use DBMSs, they have to provide user-interactive undo by themselves due to lack of support from the DBMSs. Since implementation of user-interactive undo is quite complex, it poses significant burden to application programmers. This paper proposes a new recovery method facilitating user-interactive undo in DBMSs. Such a facility relieves the programmers of implementing user-interactive undo themselves in developing DBMS applications. The method guarantees fast **rollback** of **transactions** that contain user-interactive undos. It also provides users with the bulk undo operation that **restores** the **database** to a predetermined point in the past. The bulk undo operation resembles partial rollback, but differs in that it allows redo that cancels the bulk undo. Moreover, the performance of the method is comparable to that of the traditional recovery method in spite of added functionalities. (15 Refs)

Subfile: C

Copyright 1999, IEE

23/7/6 (Item 3 from file: 2)

DIALOG(R)File 2:INSPEC

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5848225 INSPEC Abstract Number: C9804-6160B-012

**Title:** Distributed multi-level recovery in main-memory databases

**Author(s):** Rastogi, R.; Bohannon, P.; Parker, J.; Silberschatz, A.; Seshadri, S.; Sudarshan, S.

**Author Affiliation:** Bell Lab., Murray Hill, NJ, USA

**Journal:** Distributed and Parallel Databases vol.6, no.1 p.41-71

**Publisher:** Kluwer Academic Publishers,

**Publication Date:** Jan. 1998 **Country of Publication:** Netherlands

**CODEN:** DPADEH **ISSN:** 0926-8782

**SICI:** 0926-8782(199801)6:1L:41:DMLR;1-H

**Material Identity Number:** P900-98001

**U.S. Copyright Clearance Center Code:** 0926-8782/98/\$9.50

Language: English Document Type: Journal Paper (JP)

Treatment: Theoretical (T)

**Abstract:** The authors present recovery techniques for distributed main-memory databases, specifically for client-server and shared-disk architectures. They present a recovery scheme for client-server architectures which is based on shipping log records to the server, and two recovery schemes for shared-disk architectures-one based on page shipping, and the other based on broadcasting of the log of updates. The schemes offer different tradeoffs, based on factors such as update rates. Their techniques are extensions to a distributed-memory setting of a centralized recovery scheme for main-memory databases, which has been implemented in the Dali main-memory database system. The centralized as well as distributed-memory recovery schemes have several attractive features-they support an explicit multi-level recovery abstraction for high concurrency, reduce disk I/O by writing only redo log records to disk during normal processing, and use per- **transaction** redo and **undo** logs to reduce contention on the system log. Further, the techniques use a fuzzy

checkpointing scheme that writes only dirty pages to disk, yet minimally interferes with normal processing-all but one of the recovery schemes do not require updaters to even acquire a latch before updating a page. The log shipping/broadcasting schemes also support concurrent updates to the same page at different sites. (20 Refs)

Subfile: C

Copyright 1998, IEE

23/7/7 (Item 4 from file: 2)

DIALOG(R)File 2:INSPEC

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5484845 INSPEC Abstract Number: C9703-6160B-005

**Title: Distributed multi-level recovery in main-memory databases**

Author(s): Bohannon, P.; Parker, J.; Rastogi, R.; Seshadri, S.; Silberschatz, A.; Sudarshan, S.

Author Affiliation: Bell Labs., Murray Hill, NJ, USA

Conference Title: Proceedings of the Fourth International Conference on Parallel and Distributed Information Systems (Cat. No.96TB100085) p. 44-55

Publisher: IEEE Comput. Soc. Press, Los Alamitos, CA, USA

Publication Date: 1996 Country of Publication: USA xi+295 pp.

ISBN: 0 8186 7475 X Material Identity Number: XX96-03187

U.S. Copyright Clearance Center Code: 0 8186 7475 X/96/\$5.00

Conference Title: Proceedings of 4th International Conference on Parallel and Distributed Information Systems

Conference Sponsor: IEEE Comput. Soc. Tech. Committee on Data Eng.; ACM SIGMOD

Conference Date: 18-20 Dec. 1996 Conference Location: Miami Beach, FL, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: The authors present two schemes for concurrency control and recovery in distributed main-memory databases. In the client-server scheme, clients ship log records to the server, which applies the updates to its database copy. In the shared disk scheme, each site broadcasts its updates to other sites. The above enable the schemes to support concurrent updates to the same page at different sites. Both schemes support an explicit multi-level recovery abstraction for high concurrency, reduced disk I/O by writing only redo log records to disk during normal processing, and use of per-transaction redo and undo logs to reduce contention. Further, they use a fuzzy checkpointing scheme that writes only dirty pages to disk, yet minimally interferes with normal processing, not requiring updaters to even acquire a latch before updating a page. (19 Refs)

Subfile: C

Copyright 1997, IEE

23/7/10 (Item 7 from file: 2)

DIALOG(R)File 2:INSPEC

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04286299 INSPEC Abstract Number: C9301-6160-002

**Title: Database recovery using redundant disk arrays**

Author(s): Mourad, A.N.; Fuchs, W.K.; Saab, D.G.

Author Affiliation: Coordinated Sci. Lab., Illinois Univ., Urbana, IL, USA

Conference Title: Eighth International Conference on Data Engineering (Cat. No.92CH3097-3) p.176-83

Publisher: IEEE Comput. Soc. Press, Los Alamitos, CA, USA

Publication Date: 1992 Country of Publication: USA xvi+660 pp.

ISBN: 0 8186 2545 7

U.S. Copyright Clearance Center Code: 0 8186 2545 7/92\$3.00

Conference Sponsor: IEEE

Conference Date: 2-3 Feb. 1992 Conference Location: Tempe, AZ, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P); Theoretical (T)

Abstract: The authors propose a method for using redundant disk arrays to support rapid recovery from system crashes and transaction aborts in addition to their role in providing media failure recovery. A twin-page scheme is used to store the parity information in the array, making it possible to keep the old version of the parity along with the new version. The old version of the parity is used to **undo** updates performed by aborted **transactions** or by transactions interrupted by a system failure. Using an analytical model, it is shown that the proposed method achieves a significant increase in the throughput of database systems using redundant disk arrays by reducing the number of recovery operations needed to maintain the consistency of the database. (15 Refs)

Subfile: C

23/7/17 (Item 14 from file: 2)

DIALOG(R)File 2:INSPEC

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02751742 INSPEC Abstract Number: C86052587

**Title: An algorithm for database reconstruction in distributed environments**

Author(s): Son, S.H.; Agrawala, A.K.

Author Affiliation: Dept. of Comput. Sci., Virginia Univ., Charlottesville, VA, USA

Conference Title: 6th International Conference on Distributed Computing Systems Proceedings (Cat. No. 86CH2293-9) p.532-9

Publisher: IEEE Comput. Soc. Press, Washington, DC, USA

Publication Date: 1986 Country of Publication: USA x+630 pp.

ISBN: 0 8186 0697 5

U.S. Copyright Clearance Center Code: CH2293-9/86/0000-0532\$01.00

Conference Sponsor: IEEE

Conference Date: 19-23 May 1986 Conference Location: Cambridge, MA, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P); Theoretical (T)

Abstract: **Database reconstruction** is a technique to achieve consistency when a failure damages the contents of the database. A new scheme for the **reconstruction** of the **database** in distributed environments is proposed. With this scheme, only those committed **transactions** that must be deleted are **removed** during reconstruction. The correctness of the scheme is proved, and the performance characteristics of the scheme are analyzed using a probabilistic model of transaction processing. (12 Refs)

Subfile: C

? t23/7/21-22,25,31,33,35-36

23/7/21 (Item 1 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

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05224264 E.I. No: EIP99020003008

**Title: Recovery method supporting user-interactive undo in database management systems**

Author: Kim, Won-Young; Whang, Kyu-Young; Lee, Young-Koo; Kim, Sang-Wook  
Corporate Source: Korea Advanced Inst of Science and Technology, Taejeon,  
South Korea

Source: Information Sciences v 114 n 1-4 Mar 1999. p 237-253

Publication Year: 1999

CODEN: ISIJBC ISSN: 0020-0255

Language: English

Document Type: JA; (Journal Article) Treatment: T; (Theoretical)

Journal Announcement: 9904W1

Abstract: User-interactive undo is a kind of recovery facility that allows users to correct mistakes easily by canceling and reexecuting operations that have already been executed. Supporting user-interactive undo is essential for authoring processes in new database applications such as software engineering, hypermedia, and computer-aided design. A partial rollback using savepoints supported by commercial database management systems (DBMSs), which allows only cancellation of executed operations, is a restricted form of user-interactive undo. Although many applications use DBMSs, they have to provide user-interactive undo by themselves due to lack of support from the DBMSs. Since implementation of user-interactive undo is quite complex, it poses significant burden to application programmers. This paper proposes a new recovery method facilitating user-interactive undo in DBMSs. Such a facility relieves the programmers of implementing user-interactive undo themselves in developing DBMS applications. The method guarantees fast **rollback of transactions** that contain user-interactive undos. It also provides users with the bulk undo operation that **restores the database** to a predetermined point in the past. The bulk undo operation resembles partial rollback, but differs in that it allows redo that cancels the bulk undo. Moreover, the performance of the method is comparable to that of the traditional recovery method in spite of added functionalities. (Author abstract) 15 Refs.

23/7/22 (Item 2 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

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04626421 E.I. No: EIP97023532494

Title: **KRISHNA - an efficient concurrency control algorithm based on dynamic attributes of transactions and its performance**

Author: Kumar, Vijay

Corporate Source: Univ of Missouri-Kansas City, Kansas City, MO, USA

Source: Data & Knowledge Engineering v 21 n 3 Feb 1997. p 281-296

Publication Year: 1997

CODEN: DKENEW ISSN: 0169-023X

Language: English

Document Type: JA; (Journal Article) Treatment: G; (General Review); T; (Theoretical); X; (Experimental)

Journal Announcement: 9704W2

Abstract: Concurrent transactions during their execution life acquire a number of attributes. We call them dynamic attributes of transactions. We have used them to develop a concurrency control mechanism, called KRISHNA, using a two-phase locking policy. To establish the usefulness of dynamic attributes in developing concurrency control mechanisms and to investigate the behaviour of KRISHNA we have studied their performance using a detailed simulation model. We show that KRISHNA outperforms a number of well-known concurrency control mechanisms based on a two-phase policy. We also show that the conflict-resolution policy of KRISHNA is comparatively more accurate in resolving conflicts, i.e., it selects the 'right' **transaction for rolling back** or blocking. We argue that implementing KRISHNA is not expensive compared to commonly used concurrency control mechanisms. (Author abstract) 16 Refs.

23/7/25 (Item 5 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
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04262530 E.I. No: EIP95102886988

**Title: Performance of recovery algorithms for centralized database management systems**

Author: Kumar, Vijay; Moe, Shawn D.

Corporate Source: Univ of Missouri-Kansas City, Kansas City, MO, USA

Source: Information Sciences v 86 n 1-3 Sept 1995. p 101-147

Publication Year: 1995

CODEN: ISIJBC ISSN: 0020-0255

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications)

Journal Announcement: 9512W1

**Abstract: Database recovery** is responsible for preserving the database consistency after a failure of any kind (transaction, system or media). To recover from a failure, basically two operations: undo and redo are applied which can be combined in four different ways to define four different types of recovery algorithms: undo-redo, no undo-redo undo-no redo and no undo-no redo. This paper investigates the relative performance of these four algorithms through simulation. Results show that in most cases, undo-redo and no undo-redo deliver similar but better recovery performance than undo-no redo and no undo-no redo. The undo-no redo algorithm results in greater number of **transaction rollbacks**, which creates a larger **transaction log**, and thus longer recovery times. Its performance increases against undo-redo and no undo-redo as input/output performance improves. 8 Refs.

23/7/31 (Item 11 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
(c) 2005 Elsevier Eng. Info. Inc. All rts. reserv.

02958575 E.I. Monthly No: EIM9009-038051

**Title: ARIES/NT. A recovery method based on write-ahead logging for nested transactions.**

Author: Rothermel, K.; Mohan, C.

Corporate Source: IBM European Networking Cent, Heidelberg, West Ger

Conference Title: Proceedings of the Fifteenth International Conference on Very Large Data Bases

Conference Location: Amsterdam, Neth Conference Date: 19890822

E.I. Conference No.: 13326

Source: Very Large Data Bases, International Conference on Very Large Data Bases. Publ by Morgan Kaufmann Publ Inc, Los Altos, CA, USA. p 337-346

Publication Year: 1989

CODEN: VLDBDP

Language: English

Document Type: PA; (Conference Paper) Treatment: A; (Applications)

Journal Announcement: 9009

**Abstract: A simple and efficient recovery method for nested transactions, called ARIES/NT (Algorithm for Recovery and Isolation Exploiting Semantics for Nested Transactions), that uses write-ahead logging and supports semantically-rich modes of locking and operation logging is presented. This method applies to a very general model of nested transactions, which includes partial rollbacks of subtransactions, upward and downward inheritance of locks, and concurrent execution of ancestor and descendent subtransactions. The adopted system architecture encompasses aspects of**



distributed data base management also. ARIES/NT is an extension of the ARIES recovery and concurrency control method developed recently for the single-level transaction model by Mohan, et al. in the IBM Research Report RJ6649. (Author abstract) 20 Refs.

23/7/33 (Item 1 from file: 34)

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci  
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08469368 Genuine Article#: 289JZ Number of References: 40

**Title: Rewriting histories: Recovering from malicious transactions**

Author(s): Liu P (REPRINT) ; Ammann P; Jajodia S

Corporate Source: UNIV MARYLAND BALTIMORE CTY,DEPT INFORMAT

SYST/BALTIMORE//MD/21201 (REPRINT); GEORGE MASON UNIV,CTR SECURE  
INFORMAT SYST/FAIRFAX//VA/22030

Journal: DISTRIBUTED AND PARALLEL DATABASES, 2000, V8, N1 (JAN), P7-40

ISSN: 0926-8782 Publication date: 20000100

Publisher: KLUWER ACADEMIC PUBL, SPUIBOULEVARD 50, PO BOX 17, 3300 AA  
DORDRECHT, NETHERLANDS

Language: English Document Type: ARTICLE

Abstract: We consider recovery from malicious but committed transactions.

Traditional recovery mechanisms do not address this problem, except for complete rollbacks, which **undo** the work of good **transactions** as well as malicious ones, and compensating transactions, whose utility depends on application semantics. We develop an algorithm that rewrites execution histories for the purpose of backing out malicious transactions. Good transactions that are affected, directly or indirectly, by malicious transactions complicate the process of backing out undesirable transactions. We show that the prefix of a rewritten history produced by the algorithm serializes exactly the set of unaffected good transactions. The suffix of the rewritten history includes special state information to describe affected good transactions as well as malicious transactions. We describe techniques that can extract additional good transactions from this latter part of a rewritten history. The latter processing saves more good transactions than is possible with a dependency-graph based approach to recovery.

23/7/35 (Item 1 from file: 35)

DIALOG(R)File 35:Dissertation Abs Online

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01797473 ORDER NO: AADAA-I9935130

**TRUSTED RECOVERY FROM MALICIOUS ATTACKS (INFORMATION WARFARE, DATABASE)**

Author: LIU, PENG

Degree: PH.D.

Year: 1999

Corporate Source/Institution: GEORGE MASON UNIVERSITY (0883)

Directors: SUSHIL JAJODIA; PAUL AMMANN

Source: VOLUME 60/06-B OF DISSERTATION ABSTRACTS INTERNATIONAL.

PAGE 2787. 147 PAGES

Preventive measures sometimes fail to deflect malicious attacks. In this work, we adopt an information warfare perspective, which assumes success by the attacker in achieving partial, but not complete, damage. In particular, we work in the **database** context and consider **recovery** from malicious but committed transactions. Traditional recovery mechanisms do not address this problem, except for complete rollbacks, which **undo** the work of benign **transactions** as well as malicious ones, and compensating transactions, whose utility depends on application semantics. Recovery is

complicated by the presence of benign transactions that depend, directly or indirectly, on the malicious transactions.

We present recovery models to restore only the damaged part of the database. Two families of new repair algorithms are developed: one is a set of dependency-graph based algorithms, the other is a set of algorithms that do repair via rewriting histories.

Based on the dependency-graph of a history, both coldstart and warmstart repair algorithms, are presented. Information that needs to be maintained for such algorithms is also identified. Coldstart algorithms repair damage to quiescent databases; warmstart algorithms increase availability by allowing new transactions to execute concurrently with the repair process. Also, via a study of benchmarks, we show practical examples of how offline analysis can efficiently provide the necessary data to repair the damage of malicious transactions.

Based on rewriting histories, we develop an algorithm that rewrites histories for the purpose of backing out malicious transactions. We show that the prefix of a rewritten history produced by the algorithm serializes exactly the set of unaffected good transactions. We describe techniques that can extract additional good transactions from the latter part of a rewritten history. The latter processing saves more good transactions than is possible with a dependency-graph based approach or a commutativity based approach to recovery. We evaluate the feasibility of such rewriting algorithms by showing how to implement these algorithms on top of the Saga model.

23/7/36 (Item 2 from file: 35)

DIALOG(R)File 35:Dissertation Abs Online

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01537211 ORDER NO: AADMM-13562

**RELIABLE AND RECOVERABLE TRANSACTIONS IN OBJECT-BASED SYSTEMS**

Author: WIELER, CONWAY ABE

Degree: M.SC.

Year: 1994

Corporate Source/Institution: THE UNIVERSITY OF MANITOBA (CANADA) (0303)

Adviser: KEN BARKER

Source: VOLUME 35/02 of MASTERS ABSTRACTS.

PAGE 549. 156 PAGES

ISBN: 0-612-13562-4

Object based systems store information as objects; a storage format that intuitively reflects "real world" requirements. Users access the objects with transactions that take the object base from one stable state to another. Without failures, such as transaction aborts or system crashes, serializability theory and concurrency control algorithms are sufficient to provide correct transaction execution. If failures are present, transaction execution must be controlled so that **transaction** updates can be **undone** without affecting the consistency of the database. This thesis provides reliability definitions that govern transaction execution such that correct failure recovery is always possible. The recovery related components of the object based system architecture are depicted. Scheduler algorithms that satisfy the operation ordering criteria of the reliability definitions, are given. To support the reliable schedulers, a novel logging mechanism is introduced. This thesis shows that the **database** wide **recovery** scope of traditional **databases** precludes efficient, concurrent **recovery** after a failure. In an object base, encapsulated objects permit recovery within an object, creating multiple, small autonomous recovery scopes. The new logging protocol structures the log to facilitate autonomous recovery within each object. Independent object recovery promotes efficient, concurrent recovery that improves recovery performance after failures. In

addition, recovery within objects need only occur upon initial access after a system failure permitting earlier user transaction acceptance upon database restart. User transaction that comply with the reliability definitions and whose updates are logged by the innovative logging scheme execute in a reliable and recoverable manner.  
? t23/7/39,42

23/7/39 (Item 1 from file: 144)  
DIALOG(R)File 144:Pascal  
(c) 2005 INIST/CNRS. All rts. reserv.

12298109 PASCAL No.: 95-0531401  
**Performance of recovery algorithms for centralized database management systems**  
VIJAY KUMAR; MOE S D  
Univ. Missouri-Kansas City, computer sci. telecommunications, Kansas City MO 64110, USA  
Journal: Information sciences, 1995, 86 (1-3) 101-147  
ISSN: 0020-0255 CODEN: ISIJBC Availability: INIST-14256;  
354000054579900060  
No. of Refs.: 8 ref.  
Document Type: P (Serial) ; A (Analytic)  
Country of Publication: USA  
Language: English

**Database recovery** is responsible for preserving the database consistency after a failure of any kind (transaction, system or media). Relevant information solely for recovery is saved in a log during normal transaction processing. To recover from a failure, basically two operations: undo and redo are applied with the help of the log on the last consistent state of the database. These two operations can be combined in four different ways to define four different types of recovery algorithms: "undo-redo," "no undo-redo," "undo-no redo" and "no undo-no redo." Each of these algorithms manages log and updates to the database differently, which affect the overall performance and the availability of the database. To our knowledge, not much work has been done on the performance of recovery algorithms. There are only six reports available and these works have concentrated their studies on only a few algorithms. They have mainly used a queuing approach, which we believe is not adequate for a detailed performance study. In this paper we investigate the relative performance of these four algorithms through simulation. The purpose of conducting this study is first, to verify the findings of earlier works, and second, to obtain a detailed comparison of the behavior of all recovery algorithms. Our simulation studies show that in most cases, undo-redo and no undo-redo deliver similar but better recovery performance than undo-no redo and no undo-no redo. We observe that the recovery times increase with multiprogramming level, but generally decrease as the number of checkpoints increases. The undo-no redo algorithm results in a greater number of **transaction rollbacks**, which creates a larger **transaction log**, and thus longer recovery times. Its performance increases against undo-redo and no undo-redo as input/output performance improves. Slow input/output performance is also attributed to be the cause of the no undo-no redo algorithm's poor recovery performance.

23/7/42 (Item 3 from file: 256)  
DIALOG(R)File 256:TecInfoSource  
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00141283 DOCUMENT TYPE: Review

PRODUCT NAMES: Microsoft SQL Server (259748)

**TITLE:** Using the SQL Server Transaction Log to Improve Database...  
**AUTHOR:** Vaitzblit, Lev  
**SOURCE:** Database Trends, v16 n7 p4(1) Jul 2002  
**ISSN:** 1089-019X  
**HOME PAGE:** <http://www.dbtr.com>

**RECORD TYPE:** Review  
**REVIEW TYPE:** Product Analysis  
**GRADE:** Product Analysis, No Rating

This discussion describes the use of the Microsoft SQL Server Transaction Log to improve database availability and performance. By sticking to good database and log practices and leveraging third-party vendor tools, DBAs can audit database activity without overhead; resolve difficult application or user problems; swiftly and selectively recover data online; and restore when conventional recovery methods are ineffective. The purpose of a database transaction log is to allow a roll-forward recovery if a media failure occurs; and to ensure transactional semantics of a logical unit of work. If a media failure occurs, information in the transaction log is used to repeat transactions as part of **database recovery**, which **restores the database** to a consistent state that is as current as possible. The Microsoft SQL Server **transaction** log stores the redo and **undo** information to allow useful **transaction** analysis and selective data recovery. Topics covered include the write-ahead log; good log practices, including careful sizing of the transaction log from the outset, to avoid resizing later on; structure and content of the log; and structure of a log record. The components of the fixed-length common header in a log record are described.

**REVISION DATE:** 20021130  
?

File 347:JAPIO Nov 1976-2004/Aug(Updated 041203)

(c) 2004 JPO & JAPIO

File 350:Derwent WPIX 1963-2005/UD,UM &UP=200504

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? ds

Set	Items	Description
S1	99763	DATABASE? OR DATASET? ? OR DATABANK? OR DATAFILE?
S2	90630	DATA() (BASE? ? OR SET? ? OR BANK? ? OR FILE? ? OR SYSTEM? ? OR COLLECTION? ? OR LIBRARY? OR LIBRARIES)
S3	953	DATA() (ARCHIV? OR DEPOSITORY? OR DEPOSITORIES OR REPOSITOR- Y? OR REPOSITORIES OR WAREHOUS? OR (STORE OR WARE) ()HOUS??? ? OR MART? ? OR STOREHOUS?)
S4	450032	TABLE OR TABLES OR FILE OR FILES
S5	2008	UNDO OR UNDOES OR UNDONE OR UNIDID OR UNDOING OR UN() (DO OR DOES OR DONE OR DID OR DOING OR MAKE? ? OR MAKING OR MADE? ?)
S6	499089	RETRACT? OR RETROVER? OR REVERS? OR REVERT? OR RETROCES? OR RETROCED? OR RETROGRES? OR REGRESS?
S7	2544220	VOID??? ? OR REMOV??? ? OR ELIMINAT? OR PURG??? ? OR ERAS?- ??? ? OR CANCEL? OR ANNUL?
S8	53	UNMAK??? ? OR UNMAD??? ?
S9	35048	S5:S8(5N) (CHANG??? ? OR MODIFY? OR MODIFIES OR MODIFICAT? - OR ALTERR? OR ALTER?? ? OR ALTERING OR ALTERATION?)
S10	31740	S5:S8(5N) (EDIT OR EDITS OR EDITING OR EDITED OR REVIS???? ? OR TRANSACT? OR SAVE? ? OR SAVING OR LOAD??? ?)
S11	1509	S1:S3(3N) (RETURN? OR RESTOR? OR REINSTAT? OR RECONSTRUCT? - OR RECOVER?)
S12	6	S1:S3(3N)RE() (STOR??? ? OR STORATION? OR INSTAT? OR CONSTR- UCT? OR COVER?)
S13	29	S11:S12 AND S9:S10
S14	2120	ROLLBACK? OR ROLL??? ?()BACK? ?
S15	35	S14(5N) (CHANG??? ? OR MODIFY? OR MODIFIES OR MODIFICAT? OR ALTERR? OR ALTER?? ? OR ALTERING OR ALTERATION?)
S16	104	S14(5N) (EDIT OR EDITS OR EDITING OR EDITED OR REVIS???? ? - OR TRANSACT? OR SAVE? ? OR SAVING OR LOAD??? ?)
S17	22	S14:S16 AND S11:S12
S18	45	S13 OR S17
S19	45	IDPAT (sorted in duplicate/non-duplicate order)
S20	44	IDPAT (primary/non-duplicate records only)

? t20/9/1,3-5,9,12-14,23,26,35

20/9/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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016180672 \*\*Image available\*\*

WPI Acc No: 2004-338559/200431

XRPX Acc No: N04-270556

Multiple database recovering method for use in information management system, involves merging log records in single log stream in creating time sequence, and recovering multiple databases simultaneously using single log stream

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC )

Inventor: MOORE D W; RANSON K A; SULLIVAN L E; TERRY D P; VANCE G W; WATTS V L

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6732123	B1	20040504	US 9828193	A	19980223	200431 B

Priority Applications (No Type Date): US 9828193 A 19980223

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
US 6732123 B1 13 G06F-017/30

Abstract (Basic): US 6732123 B1

NOVELTY - The method involves maintaining log records in parallel from multiple logs in a single pass. The log records are read in parallel from the multiple logs. The log records are merged in a single log stream in creating time sequence. Creation time is the time when a log record is entered into a log. Multiple **databases** are **recovered** simultaneously using the single log stream.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) a signal-bearing medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform a method for merging log records for **recovering a database**

(b) an information management system to manage merging of log records to recover data.

USE - Used for **recovering** multiple **databases** in an information management system (claimed).

ADVANTAGE - The method reduces the time a broken database is unavailable by processing recovery input data in parallel and **recovering** multiple **database data sets** simultaneously. The method reduces the operational complexity and resource constraints experienced by information management system customers trying to **recover database data sets** in a data sharing environment. The method simplifies the recovery process by **eliminating** both the need for **change** accumulation and the need to run separate **recovery** jobs for each **database** set requiring **recovery**, thus reducing the impact of recovery on system resources. The method provides recovery at any point of time.

DESCRIPTION OF DRAWING(S) - The drawing shows a flow chart of an operational sequence for merging log data to **recover database data sets**.

pp; 13 DwgNo 3/5

Title Terms: MULTIPLE; DATABASE; RECOVER; METHOD; INFORMATION; MANAGEMENT; SYSTEM; MERGE; LOG; RECORD; SINGLE; LOG; STREAM; TIME; SEQUENCE; RECOVER; MULTIPLE; SIMULTANEOUS; SINGLE; LOG; STREAM

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

Manual Codes (EPI/S-X): T01-F05E; T01-G03; T01-J05B4A; T01-J05B4M; T01-S03

20/9/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015593464 \*\*Image available\*\*

WPI Acc No: 2003-655619/200362

XRPX Acc No: N03-522076

Program memory state reversion method in computer aided design applications, involves assigning handler which suspends program execution and begins execution of handler to perform successive inverse operation

Patent Assignee: AUTODESK INC (AUTO-N)

Inventor: MULLIN D; SYNGE J; ZUNDEL R E

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6543006	B1	20030401	US 99387752	A	19990831	200362 B

Priority Applications (No Type Date): US 99387752 A 19990831

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6543006	B1		17	G06F-011/00	

Abstract (Basic): US 6543006 B1

NOVELTY - A portion at system memory is allocated to store program code and data with respect to computer aided design applications. The allocated memory is protected, and a handler which temporarily suspends the program execution and begins execution of handler code, is assigned. The current program code and data are **restored** with stored **data**, **based** on the execution result of handler code to perform successive inverse operation.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) article of manufacture comprising computer-readable medium storing program memory state reversion program;

(2) application program environment modifying method; and

(3) system for **retractably modifying** system memory.

USE - For reverting program memory state in computer aided design (CAD) applications.

ADVANTAGE - Reduces the overhead in unnecessarily calling memory exception handler to track changes to memory state, and hence the application design time and erroneous result are reduced.

DESCRIPTION OF DRAWING(S) - The figure shows the flowchart explaining the program memory state reverting process.

pp; 17 DwgNo 5/7

Title Terms: PROGRAM; MEMORY; STATE; REVERSION; METHOD; COMPUTER; AID; DESIGN; APPLY; ASSIGN; HANDLE; SUSPENSION; PROGRAM; EXECUTE; BEGIN; EXECUTE; HANDLE; PERFORMANCE; SUCCESSION; INVERSE; OPERATE

Derwent Class: T01

International Patent Class (Main): G06F-011/00

File Segment: EPI

Manual Codes (EPI/S-X): T01-F05A; T01-H01B3; T01-J15; T01-S03

20/9/4 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015266818 \*\*Image available\*\*

WPI Acc No: 2003-327747/200331

XRPX Acc No: N03-262028

**Apparatus for processing general purpose real-time events, uses real-time analysis engines with main memory storage database system and a recovery model storing recovery information regarding recovery point for RAE**

Patent Assignee: LUCENT TECHNOLOGIES INC (LUCE )

Inventor: BAULIER G D; BLOTT S M; BOHANNON P L; BRANCH B L; CLIFF T M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6502133	B1	20021231	US 99276221	A	19990325	200331 B

Priority Applications (No Type Date): US 99276221 A 19990325

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6502133	B1		32	G06F-013/00	

Abstract (Basic): US 6502133 B1

NOVELTY - The apparatus for processing real-time events generated by system applications, has real-time analysis engines (RAEs) with main memory storage manager as its **database** system and a **recovery** model which stores recovery information facilitating **roll - back** to a recovery point after real-time analysis engine failure.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) method of processing events generated by system applications; and

(2) article of manufacture comprising machine-readable medium for storing programs for processing events.

USE - In telecommunication applications such as debit-based billing, fraud detection and prevention, call centers, hot billing and adjunct switching services such as local number portability and toll-free number mapping. In electronic commerce and internet service provisioning applications. In automatic teller machines or desktop personal computers, portable computers, personal digital assistants (PDAs) and other mobile computing devices.

ADVANTAGE - High performance is achieved. Reliability, robustness, usability and maintainability are enhanced. High throughput is achieved by allowing several real-time analysis engines to run in parallel.

DESCRIPTION OF DRAWING(S) - The figure depicts the syntax of subscription language.

pp; 32 DwgNo 9/15

Title Terms: APPARATUS; PROCESS; GENERAL; PURPOSE; REAL; TIME; EVENT; REAL; TIME; ANALYSE; ENGINE; MAIN; MEMORY; STORAGE; DATABASE; SYSTEM; RECOVER; MODEL; STORAGE; RECOVER; INFORMATION; RECOVER; POINT

Derwent Class: T01; T05; W01

International Patent Class (Main): G06F-013/00

File Segment: EPI

Manual Codes (EPI/S-X): T01-M06A1A; T01-N01A1; T01-N01A2A; T01-N02B1; T05-L02; W01-C02G3B; W01-C05B3C; W01-C06E

20/9/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014876716 \*\*Image available\*\*

WPI Acc No: 2002-697422/200275

XRPX Acc No: N02-549888

**Modified database content maintenance and reconstruction for data warehousing company, involves undoing loading process of database such that resulting database content indicates data as if loading had not been done**

Patent Assignee: REUTERS LTD (REUT-N); MEHTA S K (MEHT-I); ROZENSHTAIN D (ROZE-I)

Inventor: MEHTA S K; ROZENSHTAIN D

Number of Countries: 100 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020087271	A1	20020704	US 2001259513	P	20010104	200275 B
			US 2001876993	A	20010611	
WO 200254193	A2	20020711	WO 2002US99	A	20020104	200275
AU 2002236701	A1	20020716	AU 2002236701	A	20020104	200427

Priority Applications (No Type Date): US 2001259513 P 20010104; US 2001876993 A 20010611

Patent Details:



Patent No Kind Lan Pg Main IPC Filing Notes  
US 20020087271 A1 30 G06F-007/00 Provisional application US 2001259513

WO 200254193 A2 E G06F-000/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU  
ZA ZM ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

AU 2002236701 A1 G06F-007/00 Based on patent WO 200254193

Abstract (Basic): US 20020087271 A1

NOVELTY - A database is updated by loading several input data tables into a target table in the database. The **undoing** of the **loading** process is performed such that the resulting content in the database indicates the data, as if the loading had not been performed.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) Modified **database** content maintenance and **reconstruction** system; and

(2) Computer readable medium storing modified **database** content maintenance and **reconstruction** program.

USE - For maintaining and **reconstructing database in data warehousing** company.

ADVANTAGE - The database content which is modified by a series of events such as **loads** or **load retractions** are maintained and reconstructed easily without requiring the need to re-perform the sequence of events.

DESCRIPTION OF DRAWING(S) - The figure shows the sequence of events for modifying the table in the database.

pp; 30 DwgNo 1/8

Title Terms: MODIFIED; DATABASE; CONTENT; MAINTAIN; RECONSTRUCT; DATA; WAREHOUSE; COMPANY; UNDO; LOAD; PROCESS; DATABASE; RESULT; DATABASE; CONTENT; INDICATE; DATA; LOAD

Derwent Class: T01

International Patent Class (Main): G06F-000/00; G06F-007/00

File Segment: EPI

Manual Codes (EPI/S-X): T01-J05B2; T01-J05B4M; T01-S03

20/9/9 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014262439 \*\*Image available\*\*

WPI Acc No: 2002-083137/200211

XRPX Acc No: N02-061903

**System for transaction-selective reconstruction of database objects by selectively targeting and undoing those transactions that caused data corruption**

Patent Assignee: LUMIGENT TECHNOLOGY (LUMI-N); VAITZBLIT L (VAIT-I); LUMIGENT TECHNOLOGIES INC (LUMI-N)

Inventor: VAITZBLIT L

Number of Countries: 096 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200190954	A2	20011129	WO 2001US16464	A	20010522	200211 B
US 20020007363	A1	20020117	US 2000207006	P	20000525	200212

			US 2001861830	A	20010521	
AU 200164783	A	20011203	AU 200164783	A	20010522	200221
US 6769074	B2	20040727	US 2000207006	P	20000525	200449
			US 2001861830	A	20010521	

Priority Applications (No Type Date): US 2001861830 A 20010521; US 2000207006 P 20000525

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200190954 A2 E 43 G06F-017/30

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

US 20020007363 A1 G06F-012/00 Provisional application US 2000207006

AU 200164783	A		Based on patent WO 200190954
US 6769074	B2	G06F-011/00	Provisional application US 2000207006

Abstract (Basic): WO 200190954 A2

NOVELTY - The first 96 bytes of a data page comprise the page header (1) and the rest of the page comprises data rows (2) and a row offset array (3), while a data row cannot span multiple pages and the number of rows stored on a given page varies according to the structure of the table and the data being stored. The data row is a block of two-byte entries, each indicating the offset on the page on which the corresponding data row begins.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for methods of constructing a **rollback** script used to **modify** data and for determining contents of a row in a database, for computer executed process steps on a computer readable medium and for apparatus for configuring a computerized **database restoration** system.

USE - Transaction-selective **reconstruction** of **database** objects.

ADVANTAGE - Allowing recovery of fine-grained objects.

DESCRIPTION OF DRAWING(S) - The drawing is a block diagram of a data page

Header (1)  
Data rows (2)  
Offset array (3)  
pp; 43 DwgNo 1/6

Title Terms: SYSTEM; TRANSACTION; SELECT; RECONSTRUCT; DATABASE; OBJECT; SELECT; UNDO; TRANSACTION; CAUSE; DATA; CORRUPT

Derwent Class: T01

International Patent Class (Main): G06F-011/00; G06F-012/00; G06F-017/30

File Segment: EPI

Manual Codes (EPI/S-X): T01-F05B2; T01-G05; T01-J05B2; T01-J05B4M; T01-J05B4P; T01-S01C; T01-S03

20/9/12 (Item 12 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014131319 \*\*Image available\*\*

WPI Acc No: 2001-615530/200171

XRPX Acc No: N01-459107

Dead transaction recovery method in database management system, involves parallely undoing changes identified in each of sets of

**changes by using corresponding recovery process**

Patent Assignee: ORACLE CORP (ORAC-N)

Inventor: GANESH A; NGAI G C

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6295610	B1	20010925	US 98156551	A	19980917	200171 B

Priority Applications (No Type Date): US 98156551 A 19980917

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6295610	B1		38	G06F-011/14	

Abstract (Basic): US 6295610 B1

NOVELTY - Parallely removable two or more sets of changes made by a particular dead transaction are identified. A corresponding recovery process is assigned to each of the identified sets of **changes**. The identified **changes** are **undone** in parallel using the recovery process.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (a) Computer readable medium carrying instructions for **removing changes** made by **transaction** ;
- (b) System for **removing changes** made by particular **transaction**

USE - Used in **database** management system for **recovering** dead transactions.

ADVANTAGE - Speed of recovery is increased by parallely **undoing** the **changes** identified in each of sets of changes made by a dead transaction using corresponding recovery process. Allows a particular resource that is held by a dead transaction to be recovered without having to recover other resources that are not currently of interest.

DESCRIPTION OF DRAWING(S) - The figure shows the flow diagram of method for recovering resources after transaction failure in a database.

pp; 38 DwgNo 6/16

Title Terms: DEAD; TRANSACTION; RECOVER; METHOD; DATABASE; MANAGEMENT; SYSTEM; UNDO; CHANGE; IDENTIFY; SET; CHANGE; CORRESPOND; RECOVER; PROCESS

Derwent Class: T01

International Patent Class (Main): G06F-011/14

File Segment: EPI

Manual Codes (EPI/S-X): T01-J05B2; T01-J05B4M; T01-S03

**20/9/13 (Item 13 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

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013965689 \*\*Image available\*\*

WPI Acc No: 2001-449903/200148

Related WPI Acc No: 1999-069998; 2003-863159; 2004-267799; 2004-667323

XRPX Acc No: N01-332955

**Transaction recovery method for use in database management system, involves selecting previously unselected transaction and processing it until all transactions are processed**

Patent Assignee: ORACLE CORP (ORAC-N)

Inventor: NGAI G C; RIZVI H; TAN L L

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
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US 6182241 B1 20010130 US 96618443 A 19960319 200148 B  
US 98141765 A 19980827

Priority Applications (No Type Date): US 96618443 A 19960319; US 98141765 A 19980827

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6182241	B1	12	H02H-003/05		Cont of application US 96618443 Cont of patent US 5850507

Abstract (Basic): US 6182241 B1

NOVELTY - A specified maximum number of **changes** to be **undone** for each **transaction** is established, during phase of recovery. A previously unselected **transaction** is selected, and processed by **undoing changes** in the database made by selected transaction. The process of selecting and processing the transactions is repeated until all transactions are processed.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) Computer system;

(b) Computer readable medium storing recovery program

USE - For database management system (DBMS) for crash instance **recovery transactions in database**.

ADVANTAGE - By making database available to users after updating **transaction** information and before **undoing** any updates by dead **transaction**, user is allowed to access the database instantly after crash, without the need to wait for DBMS to **roll back** every uncommitted **transaction** present during system failure. Instead of sequentially **rolling back** entire **transactions** which are marked dead, only a predefined number of **undo** records of dead **transaction** is applied and then **roll back** of next dead **transaction** is performed, thus long delays due to the **roll back** of long **transaction** is avoided.

DESCRIPTION OF DRAWING(S) - The figure shows flowchart of transaction recovery method.

pp; 12 DwgNo 5/6

Title Terms: TRANSACTION; RECOVER; METHOD; DATABASE; MANAGEMENT; SYSTEM; SELECT; UNSELECTED; TRANSACTION; PROCESS; TRANSACTION; PROCESS

Derwent Class: T01

International Patent Class (Main): H02H-003/05

International Patent Class (Additional): H03K-019/003

File Segment: EPI

Manual Codes (EPI/S-X): T01-G03; T01-J05B3; T01-J05B4M; T01-S03

20/9/14 (Item 14 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013831058 \*\*Image available\*\*

WPI Acc No: 2001-315270/200133

Related WPI Acc No: 1996-354177; 1998-467034; 1998-506088

XRPX Acc No: N01-226526

Performing incremental undo when recovering computer database from failure has changes stored for number of data blocks in single undo record

Patent Assignee: ORACLE CORP (ORAC-N)

Inventor: BAMFORD R J; HUANG W; KLEIN J D; NAINANI B; NGAI G C

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6185577	B1	20010206	US 98103515	A	19980623	200133 B

Priority Applications (No Type Date): US 98103515 A 19980623

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6185577	B1	15	G06F-012/00		

Abstract (Basic): US 6185577 B1

NOVELTY - Changes are stored for number of data blocks in a single undo record; current **rollback** entry (508) is established which belongs to number of **rollback** entries within the undo record; status flag is established (512) corresponding to the current **rollback** entry; and a next **rollback** entry is established in the number of **rollback** entries as the current **rollback** entry without applying the current **rollback** entry when it has been applied.

DETAILED DESCRIPTION - When the current **rollback** entry has not been applied then: the current **rollback** entry is retrieved (516) from the number of **rollback** entries. **Changes** are applied which are indicated by the current **rollback** entry to the particular data block; and setting the status flag (528) in the undo record to indicate the current **rollback** entry has been applied.

INDEPENDENT CLAIMS are also included for the following: A computer-readable medium carrying one or more sequences of instructions; and A computer system having a database server.

USE - For incrementally applying an **undo** record during **transaction** recovery or **rollback**.

ADVANTAGE - More than one **change** can be stored in an **undo** record. Also less overhead is used when recording **changes** in the **undo** record, the **undo** information takes less space both in memory and on persistent storage, and more than one change may be applied to disk in a single atomic operation providing overall a more efficient recovery process.

DESCRIPTION OF DRAWING(S) - The figure shows a flowchart depicting the steps for incrementally applying an undo record.

pp; 15 DwgNo 5/6

Title Terms: PERFORMANCE; INCREMENT; UNDO; RECOVER; COMPUTER; DATABASE; FAIL; CHANGE; STORAGE; NUMBER; DATA; BLOCK; SINGLE; UNDO; RECORD

Derwent Class: T01

International Patent Class (Main): G06F-012/00

International Patent Class (Additional): G06F-017/30

File Segment: EPI

Manual Codes (EPI/S-X): T01-F05E; T01-H07C5S; T01-J05B4M; T01-S03

20/9/23 (Item 23 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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009352218 \*\*Image available\*\*

WPI Acc No: 1993-045699/199305

XRPX Acc No: N93-034981

Recovery in multi-level database systems - includes operation leg which acts both as commit record for sub-transaction and as update record for higher level transaction

Patent Assignee: DIGITAL EQUIP CORP (DIGI )

Inventor: LOMET D B

Number of Countries: 017 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
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WO 9301549	A1	19930121	WO 92US5887	A	19920710	199305	B
US 5287501	A	19940215	US 91728661	A	19910711	199407	
EP 595925	A1	19940511	EP 92915900	A	19920710	199419	
			WO 92US5887	A	19920710		
EP 595925	B1	19970910	EP 92915900	A	19920710	199741	
			WO 92US5887	A	19920710		
DE 69222169	E	19971016	DE 622169	A	19920710	199747	
			EP 92915900	A	19920710		
			WO 92US5887	A	19920710		

Priority Applications (No Type Date): US 91728661 A 19910711

Cited Patents: 5.Jnl.Ref; EP 425415

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9301549	A1	E	76	G06F-011/14	
				Designated States (National): JP KR	
				Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LU MC NL SE	
US 5287501	A		21	G06F-015/40	
EP 595925	A1	E	76	G06F-011/14	Based on patent WO 9301549
				Designated States (Regional): DE FR GB IT	
EP 595925	B1	E	32	G06F-011/14	Based on patent WO 9301549
				Designated States (Regional): DE FR GB IT	
DE 69222169	E			G06F-011/14	Based on patent EP 595925
					Based on patent WO 9301549

Abstract (Basic): WO 9301549 A

In the database system the log record entered into the durable operation log in response to a forward subtransactions commitment additionally includes that subtransaction's parent **transaction**'s **transaction** ID and **undo** information identifying an **undo**-operation routine at the parent **transaction**'s level for **undoing** that subtransaction.

The recovery system recovers from an aborted parent transaction by causing the transaction system to perform a compensation transaction at the parent transaction's subtransaction's level by executing the undo-operation routine identified by the undo information in a log record entered in response to the commitment of a subtransaction of that parent transaction.

ADVANTAGE - Can handle multi-level recovery with very few restrictions on timing of its updates and log entries.

Dwg.1/12

Abstract (Equivalent): EP 595925 B

A database system (10) that includes transaction means (14) for performing transactions, including both forward and compensation transactions, on database resources (12) at different levels of abstractions, some transactions, called subtransactions (L0), being constituent operations of other, higher-level, parent transactions (L1); logging means (12, 14) for maintaining a durable operation log (31) into which, in response to loggable events in a transaction's performance, including the commitment of the transaction, the logging means enters log records (56,64) that include a transaction ID (36) identifying that transaction; and recovery means for recovering from an abort of a transaction by causing the **transaction** means to perform **undo** operations in accordance with the contents (42) of log records that include that transaction's ID, the database system being characterised in that: A) the log record (64) entered into the durable operation log (31) in response to a forward subtransaction's commitment (64b) additionally includes that subtransaction's parent **transaction**'s **transaction** ID (70a) and **undo** information (74) identifying an **undo**-operation routine at the parent **transaction**'s level for **undoing** that subtransaction; and B) the recovery means recovers from

an aborted parent (L1) transaction (50) by causing the transaction means to perform a compensation transaction (98,100,102,104b) at the parent transaction's subtransaction's level (LO) by executing the undo-operation routine identified by the undo information (74) in a log record (64) entered in response to the commitment (64b) of a subtransaction (46) of the parent transaction.

Dwg.1/12

Abstract (Equivalent): US 5287501 A

When a subtransaction of a higher level transaction commits during the operation of a database, the database enters into its operation log a record that acts both as a commit record for the subtransaction and as an update record for the higher-level transaction.

The record includes a field (74) which identifies a higher-level "undo" transaction whereby the subtransaction can be undone without individually undoing its constituent operations. By logging operations in this manner, the database can handle multi-level recovery with very few restrictions on the timing off its updates and log entries.

ADVANTAGE - Makes adoption of multi-level recovery more attractive.

Dwg.6/12

Title Terms: RECOVER; MULTI; LEVEL; DATABASE; SYSTEM; OPERATE; LEG; ACT; COMMIT; RECORD; SUB; TRANSACTION; UPDATE; RECORD; HIGH; LEVEL; TRANSACTION

Derwent Class: T01

International Patent Class (Main): G06F-011/14; G06F-015/40

File Segment: EPI

Manual Codes (EPI/S-X): T01-F05B; T01-G03; T01-G05C1; T01-J05B4

20/9/26 (Item 26 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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007261105

WPI Acc No: 1987-258112/198737

XRPX Acc No: N87-193269

Method for restarting fault-tolerant operation - logging only minimal amount of information, recording positions within data sets to be loaded and within table space being loaded

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC ); IBM CORP (IBMC )

Inventor: REINSCH R A; ZIMOWSKI M R

Number of Countries: 006 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 236743	A	19870916	EP 87101585	A	19870205	198737 B
US 4868744	A	19890919	US 86835396	A	19860303	198947
CA 1273434	A	19900828				199040
EP 236743	B1	19931215	EP 87101585	A	19870205	199350
DE 3788444	G	19940127	DE 3788444	A	19870205	199405
			EP 87101585	A	19870205	

Priority Applications (No Type Date): US 86835396 A 19860303

Cited Patents: No-SR.Pub; 2.Jnl.Ref; JP 59108441; US 3564506

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 236743 A E 13

Designated States (Regional): DE FR GB IT

US 4868744 A 18

EP 236743 B1 E 13 G06F-011/14

Designated States (Regional): DE FR GB IT

DE 3788444 G G06F-011/14 Based on patent EP 236743

Abstract (Basic): EP 236743 A

The method for executing a restartable LOAD operation in a transaction oriented data base system comprises the steps of reiteratively moving a predetermined quantity of a sequential data set and appending the quantity to the end of a data base system formatted object. The current position is recorded within the data set and establishes another end position within the formatted object, the step continuing either until the data set becomes exhausted or a transaction in progress becomes interrupted.

In the event of transaction interruption, the operation from the last conduit is restarted by emulating redo and undo without recourse to the before and after images of the formatted object from the log.

ADVANTAGE - Minimises number of steps involved in restart of long-running, fault-tolerant operations in data base system.

.0/6

Abstract (Equivalent): EP 236743 B

A method for restarting a long-running, fault-tolerant LOAD operation in a transaction-oriented data base system having a data base, said data base including a log, a sequential data set, and a data base formatted object; and means managing transaction, **data base** and **recovery** processing; all transaction-oriented charges to the data base being written to the log in support of recovery in the event of interruption, each **transaction** utilising BEGIN, COMMIT, or **ROLLBACK** primitives to bound said **transactions**, REDOs ensuring transaction return to the most recent COMMIT point, while UNDOs ensuring return to the transaction BEGIN point, characterised in that the method comprises the computer-implemented steps of: (a) performing a restartable LOAD operation consisting of a plurality of transactions, said transactions reiteratively moving a predetermined quantity of the sequential data set and appending said quantity to the end of said formatted object, each of said transactions ending with an intermediate COMMIT point; recording in the log no REDO or **UNDO** records containing **loaded** data, recording in the log at each intermediate COMMIT point the current position within the data set and the end position of the formatted object, and establishing another end position within the formatted object, force writing at each intermediate COMMIT point all updated formatted data to non-volatile storage; said step continuing either until the data set becomes exhausted or a transaction in progress becomes interrupted and (b) in the event of transaction interruption, restarting the long-running LOAD operation from the most recent COMMIT point in that the LOAD operation is repositioned by access to the most recently log-recorded data set and formatted object positional information and all data within the formatted object following the end position recorded in the log is deleted.

(Dwg.1/6

Abstract (Equivalent): US 4868744 A

A restartable load without logging method permits the restart of a LOAD operation from the last COMMIT point without requiring the writing of images of loaded records to the log. Instead, the method logs only a minimal amt. of information, recording positions within the data sets to be loaded and within the tablespace being loaded. (18pp)

Title Terms: METHOD; RESTART; FAULT; TOLERATE; OPERATE; LOG; MINIMUM; AMOUNT; INFORMATION; RECORD; POSITION; DATA; SET; LOAD; TABLE; SPACE; LOAD

Derwent Class: T01

International Patent Class (Main): G06F-011/14

International Patent Class (Additional): G06F-007/00; G06F-012/00

File Segment: EPI

Manual Codes (EPI/S-X): T01-G03; T01-J05B



20/9/35 (Item 35 from file: 347)  
DIALOG(R)File 347:JAPIO  
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04298312 \*\*Image available\*\*  
DISTRIBUTED DATA PROCESSING SYSTEM

PUB. NO.: 05-290012 [JP 5290012 A]  
PUBLISHED: November 05, 1993 (19931105)  
INVENTOR(s): SAKAMOTO AKIHITO  
KODERA MAKOTO  
HIRANUMA YUICHIRO  
APPLICANT(s): OKI ELECTRIC IND CO LTD [000029] (A Japanese Company or  
Corporation), JP (Japan)  
APPL. NO.: 04-085321 [JP 9285321]  
FILED: April 07, 1992 (19920407)  
INTL CLASS: [5] G06F-015/16; G06F-015/16; G06F-012/00; G06F-015/40  
JAPIO CLASS: 45.4 (INFORMATION PROCESSING -- Computer Applications); 45.2  
(INFORMATION PROCESSING -- Memory Units)  
JOURNAL: Section: P, Section No. 1691, Vol. 18, No. 85, Pg. 129,  
February 10, 1994 (19940210)

#### ABSTRACT

PURPOSE: To provide a distributed data processing system capable of determining smoothly all the commitment/ **roll - back** of **transaction** through the mutual cooperation of plural distributed data management functions installed in one computer.

CONSTITUTION: Plural distributed data management functions B1 to Bn equipped in one computer 101 are constituted into hierarchical structure in which they are connected to the **data base recovery** function 104 of this computer successively from the lower-rank one as seeing from an applied application program, and the **transaction** whose commitment/ **roll - back** can not be determined in the **data base recovery** function 104 and the lower-rank distributed data management function is committed to the higher-rank distributed data management function about the determination of the commitment/ **roll - back** .  
?

File 347:JAPIO Nov 1976-2004/Aug(Updated 041203)  
 (c) 2004 JPO & JAPIO  
 File 350:Derwent WPIX 1963-2005/UD,UM &UP=200504  
 (c) 2005 Thomson Derwent  
 File 348:EUROPEAN PATENTS 1978-2005/Jan W03  
 (c) 2005 European Patent Office  
 File 349:PCT FULLTEXT 1979-2002/UB=20050120,UT=20050113  
 (c) 2005 WIPO/Univentio  
 File 324:German National Patents 1980-2004/Nov  
 (c) 2004 Univention

Set	Items	Description
S1	9	AU=ROZENSHTTEIN D?
S2	347	AU=MEHTA S?
S3	2030257	LOAD?
S4	198887	DATABASE? OR DATASET? ? OR DATABANK? OR DATAFILE?
S5	237944	DATA() (BASE? ? OR SET? ? OR BANK? ? OR FILE? ? OR SYSTEM? ? OR COLLECTION? ? OR LIBRARY? OR LIBRARIES)
S6	8192	DATA(2N) (ARCHIV? OR DEPOSITORY? OR DEPOSITORIES OR REPOSIT- ORY? OR REPOSITORIES OR WAREHOUS? OR (STORE OR WARE) ( )HOUS??? ? OR MART? ? OR STOREHOUS?)
S7	1391536	TABLE OR TABLES OR FILE OR FILES
S8	34606	S3(5N)S4:S7
S9	5	S1:S2 AND S8

9/9/1 (Item 1 from file: 350)  
 DIALOG(R)File 350:Derwent WPIX  
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014876716 \*\*Image available\*\*  
 WPI Acc No: 2002-697422/200275  
 XRPX Acc No: N02-549888

**Modified database content maintenance and reconstruction for data  
 warehousing company, involves undoing loading process of database  
 such that resulting database content indicates data as if loading had  
 not been done**

Patent Assignee: REUTERS LTD (REUT-N); MEHTA S K (MEHT-I); ROZENSHTTEIN D  
 (ROZE-I)

Inventor: MEHTA S K ; ROZENSHTTEIN D

Number of Countries: 100 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020087271	A1	20020704	US 2001259513	P	20010104	200275 B
			US 2001876993	A	20010611	
WO 200254193	A2	20020711	WO 2002US99	A	20020104	200275
AU 2002236701	A1	20020716	AU 2002236701	A	20020104	200427

Priority Applications (No Type Date): US 2001259513 P 20010104; US  
 2001876993 A 20010611

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020087271	A1		30	G06F-007/00	Provisional application US 2001259513

WO 200254193 A2 E G06F-000/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
 CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
 IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
 OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU  
 ZA ZM ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
 IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

AU 2002236701 A1 G06F-007/00 Based on patent WO 200254193

Abstract (Basic): US 20020087271 A1

NOVELTY - A **database** is updated by **loading** several input data **tables** into a target table in the **database**. The undoing of the **loading** process is performed such that the resulting content in the database indicates the data, as if the loading had not been performed.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) Modified database content maintenance and reconstruction system; and

(2) Computer readable medium storing modified database content maintenance and reconstruction program.

USE - For maintaining and reconstructing database in data warehousing company.

ADVANTAGE - The database content which is modified by a series of events such as loads or load retractions are maintained and reconstructed easily without requiring the need to re-perform the sequence of events.

DESCRIPTION OF DRAWING(S) - The figure shows the sequence of events for modifying the table in the database.

pp; 30 DwgNo 1/8

Title Terms: MODIFIED; DATABASE; CONTENT; MAINTAIN; RECONSTRUCT; DATA; WAREHOUSE; COMPANY; UNDO; LOAD; PROCESS; DATABASE; RESULT; DATABASE; CONTENT; INDICATE; DATA; LOAD

Derwent Class: T01

International Patent Class (Main): G06F-000/00; G06F-007/00

File Segment: EPI

Manual Codes (EPI/S-X): T01-J05B2; T01-J05B4M; T01-S03

9/6/2 (Item 1 from file: 349)

01071389

POLYETHYLENE BLENDS

MELANGES DE POLYETHYLENES

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 2964

Publication Year: 2003

? t9/5/3-5

9/5/3 (Item 2 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00967911 \*\*Image available\*\*

METHOD AND SYSTEM FOR TWO-WAY INITIATED DATA COMMUNICATION WITH WIRELESS DEVICES

PROCEDE ET SYSTEME DE COMMUNICATION DE DONNEES AVEC DES DISPOSITIFS SANS FIL LANCEE DE FACON BILATERALE

Patent Applicant/Assignee:

4TH PASS INC, 83 South King Street, Suite 100, Seattle, WA 98104, US, US  
(Residence), US (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

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US (Residence), US (Nationality), (Designated only for: US)  
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, US, US (Residence), IN (Nationality), (Designated only for: US)  
JANSEN Markus L, 300 Vuemont Place Northeast, Apt. N203, Renton, WA 98056  
, US, US (Residence), DE (Nationality), (Designated only for: US)  
GOW Edward L, 9822 Waters Avenue South, Seattle, WA 98118, US, US  
(Residence), US (Nationality), (Designated only for: US)  
NGUYEN Ngochan T, 4601 South Graham Street, Apt. 117, Seattle, WA 98118,  
US, US (Residence), VN (Nationality), (Designated only for: US)

Legal Representative:

BIERMAN Ellen M (et al) (agent), Seed Intellectual Property Law Group  
PLLC, Suite 6300, 701 Fifth Avenue, Seattle, WA 98104-7092, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 2002102012 A2-A3 20021219 (WO 02102012)  
Application: WO 2002US18485 20020610 (PCT/WO US0218485)  
Priority Application: US 2001296902 20010608

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI  
SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04L-029/12

International Patent Class: H04L-029/08; H04L-012/06

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 13187

English Abstract

Methods and systems for providing two-way initiated, bi-directional communication with wireless devices using connection-based or connection-less protocols, such as, TCP/IP and UDP/IP, are provided. An Address Management Proxy System ("AMPS"), which enables devices and systems connected to a public internet, is provided, to initiate communication with and to send data to wireless devices connected to a private wireless network, without exposing the non-routable private addresses of these wireless devices. The AMPS allocates a public (routable) network address for temporarily use by a requesting device on a public network to communicate with a wireless device on a wireless network. A pool of public addresses, maintained by the AMPS and allocated dynamically to wireless network devices as required. The AMPS comprises one or more modified DNS/API servers, Address Proxy/Routers, an Address Management Data Server, data repositories, and optionally a load balancer. The AMPS DNS'/API server receives a request from a device on a public network for a particular wireless device, and returns an appropriate temporary public address, which is internally mapped to the private address of the wireless device.

French Abstract

L'invention concerne des procedes et des systemes permettant une communication avec des dispositifs sans fil lancee de facon bilaterale et

bidirectionnelle au moyen de protocoles sur la base de connexion ou sans connexion, tels que, par exemple, TCP/IP et UDP/IP. Dans des modes de realisation cites en exemple un systeme mandataire de gestion des adresse (<= AMPS >=) permet a des dispositifs et des systemes connectes a un reseau internet public, tel que l'Internet, de lancer une communication avec des dispositifs sans fil et d'envoyer des donnees a des dispositifs sans fil connectes a un reseau prive sans fil, sans exposer les adresse privees non routables desdits dispositifs sans fil. Ledit AMPS attribue une adresse de reseau publique (routable) destinee a etre utilisee temporairement par un dispositif demandeur sur un reseau public, afin qu'il communique avec un dispositif sans fil sur un reseau sans fil. Dans un mode de realisation, un groupe d'adresses publiques, par exemple, des adresses IP publiques, est conserve par l'AMPS et attribue, a la demande, de facon dynamique aux dispositifs de reseau sans fil. Dans un autre mode de realisation, ledit AMPS comprend un ou plusieurs serveurs DNS/API modifies, une ou plusieurs mandataires/routeurs d'adresses, un serveur de donnees de gestion des adresses, un ou plusieurs referentiels de donnees, et, eventuellement, un equilibreur de charges. Le serveur DNS'/API de l'AMPS recoit une demande provenant d'un dispositif sur un reseau public pour un dispositif sans fil particulier, et renvoie une adresse publique temporaire appropriee, qui est mappee a l'adresse privee du dispositif sans fil. L'adresse publique est alors utilisable par le dispositif sur le reseau public pour l'envoi des donnees au dispositif sans fil.

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00921111

**MAINTAINING AND RECONSTRUCTING THE HISTORY OF DATABASE CONTENT MODIFIED BY A SERIES OF EVENTS**

**TENUE A JOUR ET RECONSTRUCTION DE L'HISTORIQUE DU CONTENU D'UNE BASE DE DONNEES MODIFIEE PAR UNE SERIE D'EVENEMENTS**

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AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ

EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI  
SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
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Detailed Description

Claims

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#### English Abstract

A method and a system for maintaining the history of database content when the database is modified by a sequence of events, where each event may be one of a load or a load retraction, is provided. The inventive system and method can reconstruct the state of a database as it existed at a discrete time between two successive historical events without repeating each event in the historical event sequence. A table containing deleted row information and a table containing historical information are maintained as the target table is updated to more quickly recreate historical states of the target table.

#### French Abstract

La presente invention concerne un procede et un systeme de tenue a jour de l'historique du contenu d'une base de donnees lorsque celle-ci a ete modifiee par une suite d'evenements dont chacun peut etre un chargement ou un retrait de charge. Le procede et le systeme de l'invention permettent de reconstituer une base de donnees a l'etat qui etait le sien a un instant T entre deux evenements successifs de son histoire, sans avoir a repeter chaque evenement dans l'ordre chronologique des evenements. Pour reconstituer plus rapidement les etats de l'historique de la table consideree, on tient a jour une table contenant des rangees d'informations supprimees, et une table contenant l'information d'historique au fur et a mesure des mises a jour de la table cible.

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00910765 \*\*Image available\*\*

**METHOD AND SYSTEM FOR MAINTAINING AND DISTRIBUTING WIRELESS APPLICATIONS  
PROCEDE ET SYSTEME PERMETTANT DE MAINTENIR ET DE DISTRIBUER DES  
APPLICATIONS SANS FIL**

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AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI  
SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
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Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 22846

#### English Abstract

Computer- and network-based methods and systems for maintaining and provisioning wireless applications are provided. Example embodiments provide a Mobile Application System (MAS), which is a collection of interoperating server components that work individually and together in a secure fashion to provide applications and resources to mobile subscriber devices, such as wireless devices. Embodiments of the present invention can also be used to deploy applications and resources for wired subscriber devices. Application, resources, and other content is provisioned and verified by the MAS for authorized access by the subscriber, compatibility with a requesting subscriber device, and the security and billing policies of the carrier and system administrators of the MAS. In this manner, applications, resources, and other content can be downloaded to devices, such as wireless devices, with greater assurance of their ability to successfully execute. In one embodiment, content is provisioned by one or more of the steps of inspecting the content for malicious or banned code, optimizing the content for smaller size and greater speed, instrumentation of code that implements security, billing, and other carrier policies, and packaging of code for the intended subscriber device. Additional security is provided through application filters that are used to prevent applications that contain designated API from being downloaded to a subscriber's device. In one embodiment, the MAS includes a Protocol Manager, Provisioning Manager, Cache, Deployment Manager, Billing Manager, Logging Manager, Administrator, and Heartbeat Monitor, which interoperate to provide the provisioning functions.

#### French Abstract

La presente invention concerne des procedes et des systemes bases sur des reseaux et sur des ordinateurs, permettant de maintenir et de mettre en oeuvre des applications sans fil. Des modes de realisation pris a titre d'exemples fournissent un Systeme d'Application Mobile (MAS), qui est une

collection de composants serveurs interoperants qui fonctionnent individuellement et ensemble de maniere securisee afin de fournir des applications et des ressources a des dispositifs d'abonnes mobiles, tels que les dispositifs sans fil. Des modes de realisation de la presente invention peuvent egalement etre utilises afin de deployer des applications et des ressources pour les dispositifs d'abonnes cables. Des applications, des ressources et autre contenu sont mis en oeuvre et verifiees par le MAS pour permettre l'acces autorise a l'abonne, la compatibilite avec un dispositif d'abonne demandeur, la ainsi que les politiques de securite et de facturation des gestionnaires de telecommunicateurs systemes du MAS. Ainsi, des applications, des ressources et autre contenu peuvent etre telecharges vers l'aval sur des dispositifs, tels que des dispositifs sans fil, avec une plus grande assurance quant a leur capacite a etre executees avec succes. Dans un mode de realisation, le contenu est mis en oeuvre au moyen d'une etape ou davantage consistant a verifier le contenu a la recherche du code interdit ou malveillant, a optimiser le contenu de maniere a obtenir une taille plus petite et une vitesse plus elevee, une instrumentation du code qui met en application la securite, la facturation et d'autres politiques de telecommunicateurs, et a integrer le code pour le dispositif d'abonne choisi. Pour davantage de securite, on utilise des filtres d'application de maniere a empecher des applications qui contiennent une API designee d'etre telechargees sur un dispositif d'abonne. Dans un mode de realisation, le MAS comprend un gestionnaire de protocole, un gestionnaire de mise en oeuvre, une antememoire, un gestionnaire de deploiement, un gestionnaire de facturation, un gestionnaire d'enregistrement, un administrateur et un moniteur de battement de coeur, qui interoperent afin de fournir les fonctions de mise en oeuvre.

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Examination	20030130	Request for preliminary examination prior to end of 19th month from priority date